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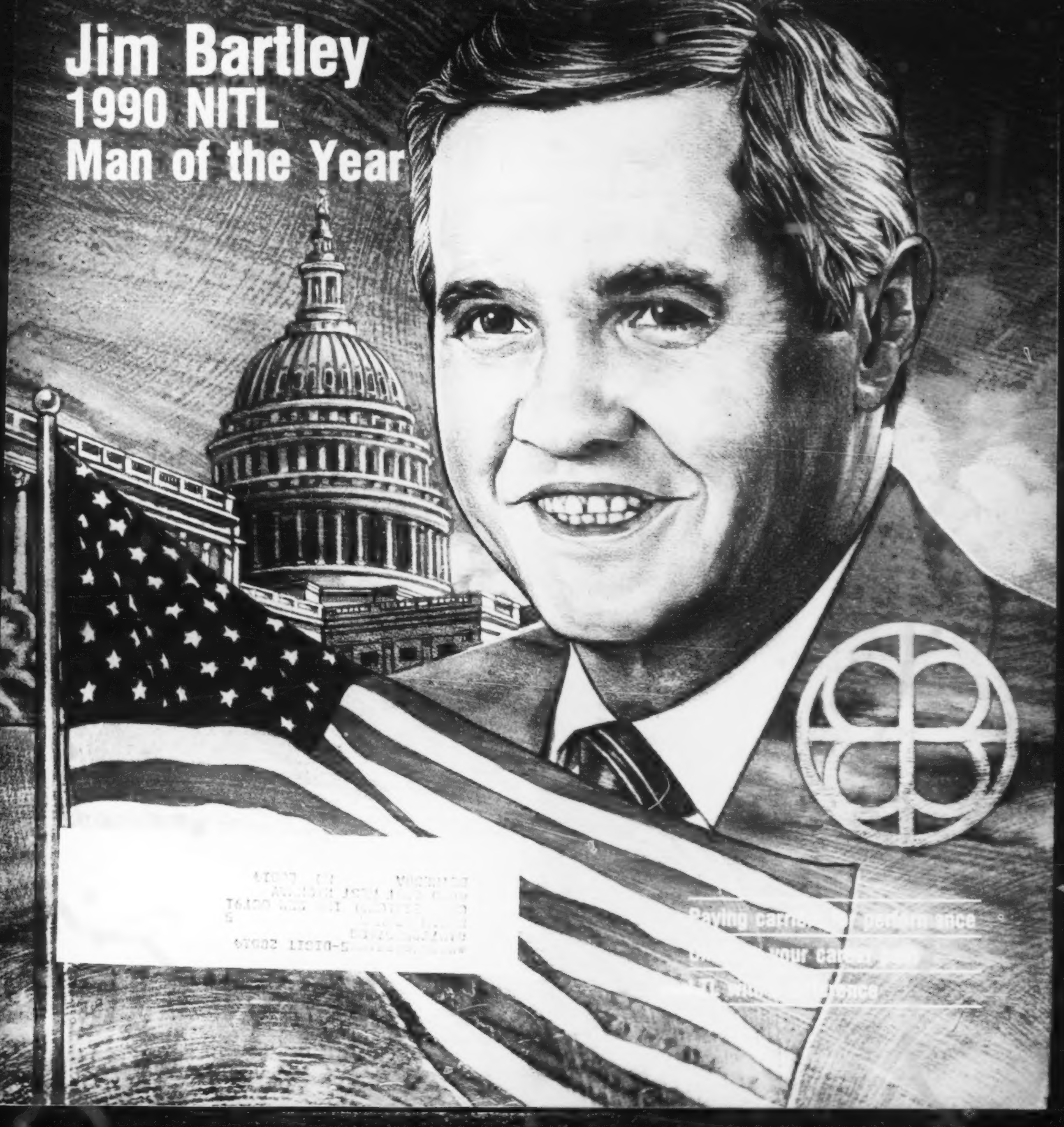
THE TRANSPORTATION & BUSINESS LOGISTICS MAGAZINE NOVEMBER 1990

WAREHOUSING:
A DESIGN FOR PRODUCTIVITY

Jim Bartley
1990 NITL
Man of the Year



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NOVEMBER 1990

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THE TRANSPORTATION & BUSINESS LOGISTICS MAGAZINE

VOL. 89, NO. 11

COVER STORY

28 THE ORGANIZATION MAN

The leader of the top U.S. trade association for shippers knows where freight transportation has been and where it must go. He is able to talk on a first name basis with every leading shipper and carrier executive in the country. He knows the intricacies of the Washington scene. Meet James E. Bartley, NITL executive director and its 1990 Man of the Year.

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TRANSPORTATION REPORT

Trucking

P.I.E. STRUGGLES TO KEEP ON TRUCKING

P.I.E. Nationwide continues to haul freight following the bankruptcy of its parent company on October 16. The long-term viability of the national LTL carrier, however, will depend on how loyal its shippers remain.

An upbeat restructuring

In an upbeat statement following the Chapter 11 filing of Olympia Holdings Corp., P.I.E. announced a restructuring that includes changing its name to P.I.E. International.

According to P.I.E. Senior Vice President William Tickle, the bankruptcy is intended to insulate P.I.E. International "from the financial difficulties of its parent and its past" and "will allow the LTL carrier to prosper beyond the 1990s." For the time being the bankruptcy court is allowing P.I.E. to use $24.4 million in cash from its operations to support the ongoing business. Tickle says P.I.E., which has had four new owners in five years, is now operating at "better than break even." The carrier earned about $520 million in 1989, making it the seventh largest LTL carrier in the nation.

P.I.E also says it will close about 50 of its 230 terminals and reduce staff by 25 percent. The terminal closings would reduce revenues to about $400 million on an annualized basis.

If the bulk of the staff cuts come from union ranks, the Teamsters may be less willing to support continued trucking operations. Says one bankruptcy attorney, "The Teamsters will have a lot to say about whether P.I.E is allowed to continue operations or goes into liquidation." Not only do the Teamsters have a seat on the company's board of directors, they also are among the largest creditors listed in Olympia's bankruptcy filing.

While P.I.E. has an uphill battle on its hands, the carrier has provided an alternative to the big three LTL carriers which shippers would not want to lose. P.I.E. sales and marketing reps are scrambling to retain customers. "The key is to explain the facts to customers," says Tickle. "Then there is no problem. We are very confident about the future of P.I.E International. However, as always, that future is in the hands of our customers. And since they have supported us through much more difficult times, we expect to merit their continued confidence and support."

FOR MOTOR CARRIERS, 1990 LOOKS LIKE A DISASTER

The nation's largest trucking companies reported substantially decreased earnings during the second quarter and the first six months of 1990, and that is the good news. The third and fourth quarters of 1990 will be far worse as a result of soaring fuel prices and slackening freight demand.

For the first half of the year, trucking revenues for the 100 largest LTL and TL carriers actually climbed by six percent over the same period last year. Revenue tons hauled was up 3.7 percent. Net operating income, however, dropped by 18.5 percent and net income, which takes in interest costs, plummeted by 24.6 percent. The average operating ratio for the first half of 1990 was 96.2 compared to 95.1 for the first half of 1989.

The Interstate Commerce Commission, which gathers the statistics, says carrier expenses are rising much faster than revenues.

The major truckload carriers have generally fared better than the LTL carriers. "True to their word regarding no capacity additions, competitive intensity has somewhat slackened," says John G. Larkin, an analyst with the Baltimore brokerage firm Alex. Brown & Sons. "No longer are large numbers of carriers looking to put large numbers of new trucks to work in a grab for market share. Without this discipline on the capacity side of the equation, things might have been bloody in the first half." Soaring fuel costs are hitting the TL carriers especially hard in the second half, even with the ever-increasing fuel surcharges. "Surcharges typically do not completely eliminate the adverse effect on margins," says Larkin.

MOTOR CARRIER FINANCIALS
($ and tons in millions)

	1st Half 1990	1st Half 1989	Percent Change
Revenues	$10.42	$ 9.84	+ 5.9%
Operating Income	$ .39	$ .48	-18.5%
Net Income	$ .19	$ .25	-24.6%
Tons Hauled	88.9	85.7	+ 3.7%

Gloomy outlook

LOGISTICS ASSERTS ITSELF AS A CAREER PATH

The picture isn't entirely rosy, but this year's career patterns survey demonstrates more than ever that logistics is becoming a separate – and successful – career path in many companies.

By Jay Gordon, Executive Editor

More and more U.S. companies are organizing logistics as a separate division or organization, and naming a logistics executive to run it. That is a major conclusion of "Career Patterns in Logistics," an annual study conducted by the Logistics Research Group at Ohio State University.

The purpose of the career patterns study is to establish baseline information about the status of logistics as a profession and to gain an understanding of how the logistics function is integrated into the organizational structure of the firm. It also helps to determine the specific responsibilities of logistics executives and to gather their opinions about future trends in logistics practice.

New in the 1990 survey was a series of questions regarding workforce issues. Respondents were asked to assess the skill levels of entry level job applicants, their difficulty in filling jobs and their commitment to training.

Ohio State has been conducting the Career Patterns survey for 19 years. This year, eight-page questionnaires were sent to 850 shipper members of the Council of Logistics Management (CLM). In each case, the form was sent to the top logistics executive in the firm. OSU received 216 responses, for a return rate of about 25 percent. While researchers feel this represents a statistically valid sample, they caution against year-to-year comparisons because the responses are anonymous.

Figure 2

DIMENSIONS OF THE LOGISTICS FUNCTION

Dimension	Logistics Activity	Direct Responsibility	Time Spent
Traffic Management	98%	80%	19%
Warehousing	97%	78%	21%
International Distribution	83%	60%	8%
Inventory Control	79%	51%	12%
Plant/Warehouse	73%	49%	9%
Order Entry	61%	32%	9%
Procurement	51%	22%	10%
Packaging	48%	18%	5%
Product Planning	36%	10%	7%
Sales Forecasting	30%	5%	5%

The survey represents a reasonable cross-section of industry (see chart on p. 40, bottom left). Also, respondents were fairly diverse in terms of company size. The median firm had revenues of $600 million; 5 percent had sales of $18 million or less, and 5 percent had sales of $12 billion or more. Most companies (44 percent) have a combination of centralized and decentralized logistics management, while 30 percent said they have centralized control and 19 percent are decentralized (see chart on p. 40, top right).

The Status of Logistics

There are several indications in the survey that logistics is increasingly perceived as a distinct discipline that is achieving wider recognition in the firm. One of those indications is the titles held by survey respondents. There are three: Manager (33 percent), Director (41 percent) or Vice President (25 percent). The vast majority work in a department that is called either Logistics or Distribution (see chart on p. 40, bottom right). A handful of executives work in either Transportation or Operations, while a few work in a department called either Manufacturing or Marketing.

"Ten years ago, a sizable number of these people would have been working in marketing," says OSU's Dr. James M. Masters, who presented the data at CLM. "This enforces the trend toward a separate division or organization for logistics."

continued

Less conclusive is the data that reveals when responding firms first appointed a senior logistics official (see chart on p. 38, bottom right). Of those that have, most (37 percent) did so in the 1980s; so far in the new decade, only 3 percent have joined the club. And a majority of companies (42 percent) have yet to give someone in the firm a senior logistics title. The question, then, is whether or not this trend has peaked. "When we started this survey, we had a handful of Vice Presidents," says Dr. Bernard J. "Bud" LaLonde, Mason Professor of Transportation & Logistics at OSU. "Now we have 25 percent VPs. There has been a long-term trend toward companies moving in the VP direction, and I would expect to see that continue."

While the discipline is undoubtedly growing, it remains relatively young (see chart on p. 38, bottom left). On average, vice presidents said they had been in the logistics field for 19 years, with their current company for 10 years and in their current position for three years. The figures are comparable for the other titles. Logistics executives, Masters says, used to advance by moving to and from other functional areas or by moving to another firm. The survey data suggests there now is a more clearly defined career path within the discipline. "Logistics is no longer a career path that you have to exit at some point," Masters says.

What Do Logistics Managers Do?

The chart on p. 36 indicates the responsibilities that fall under the logistics executive's purview, whether they have direct responsibility for that function and how much of their time is spent on it. Notable here is the number of respondents (83 percent) who list international distribution as a responsibility of theirs. The number of respondents who handle international logistics has increased dramatically over the past five years, Masters says. Procurement has also become a larger part of logistics managers' job.

Masters also notes that logistics executives are seldom involved in packaging, product planning and

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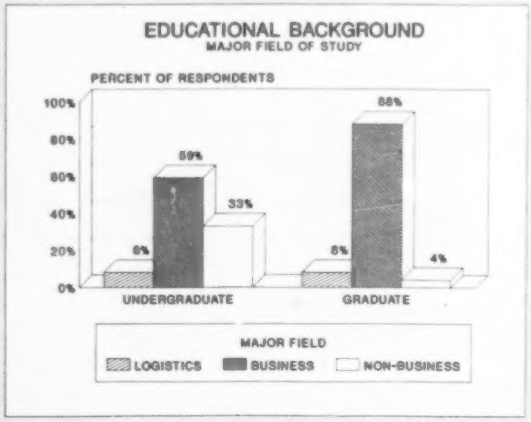

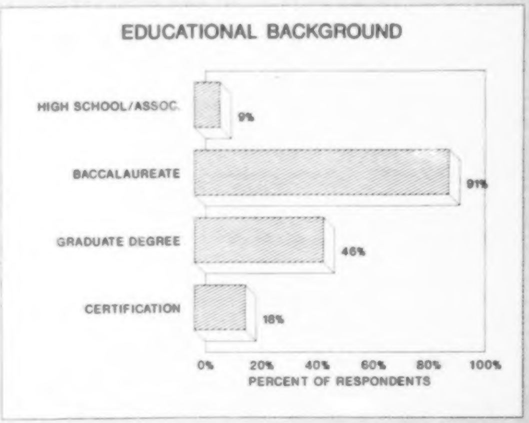

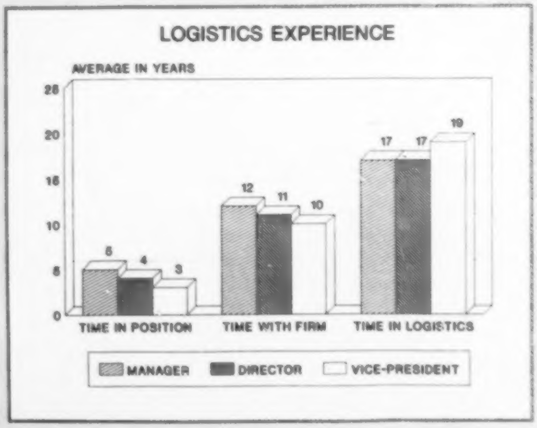

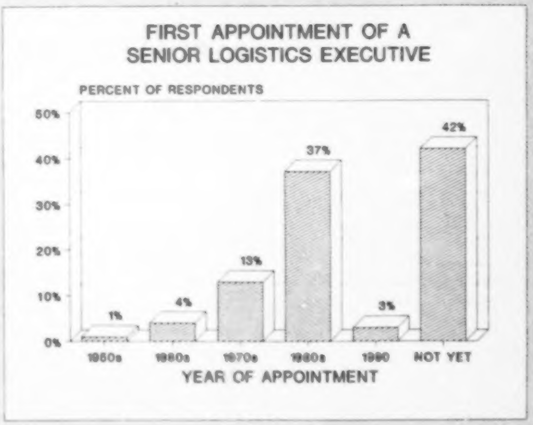

sales forecasting. Even when they do get involved, it is largely in an advisory role. Masters says he is disappointed that "something as important as sales forecasts are generated outside logistics and presented to them for input into their decision making." In order to do sales forecasting, he reasons, the company has to know what the customer wants, and this data often resides within logistics.

Respondents spend most of their time managing transportation and warehousing, though procurement again moves up the list.

In terms of education, 46 percent of the respondents have a graduate degree, and 18 percent have a professional certification in some area. At the undergraduate level, about two-thirds studied business; a handful actually majored in logistics (see chart p. 38, top right). This indicates that most of today's logisticians received "on-the-job" training.

"The average age of the executive in the survey is 44," says LaLonde, "which means they did their undergraduate schooling 25 years ago. There were precious few logistics programs at that time." Even at the graduate level, the MBA is the degree of choice, with only a few respondents mentioning post-grad schooling in logistics.

Companies are taking diffrrent approaches when it comes to grooming logistics talent, Master says. "Many companies say, 'Bring me a bright young person and I can train them in logistics,' " he says. "Others say, 'Let's get people who already have some logistics grounding at the graduate level."

Compensation Lags

While median compensation figures – salary plus bonus – for most logistics executives are on the rise, they generally lag those for executives in other functions. "If you look at (the pay for) functional executives in marketing, finance and manufac-

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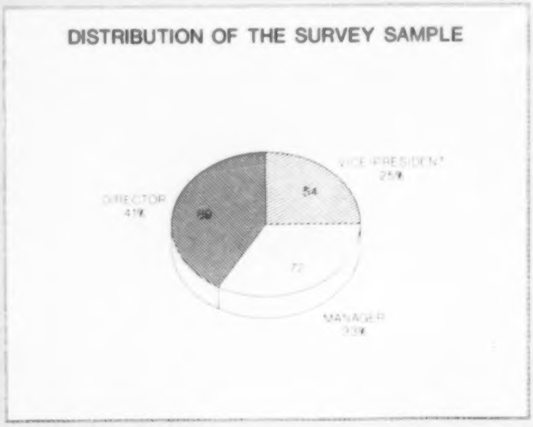
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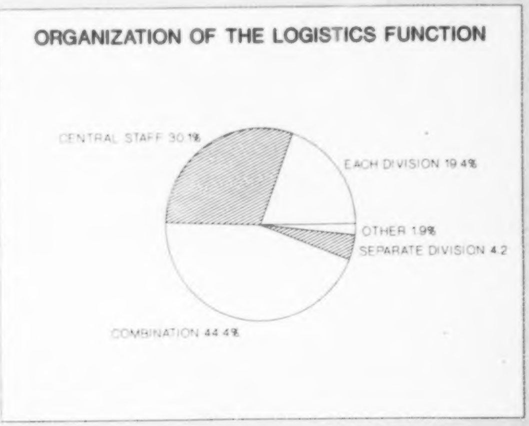
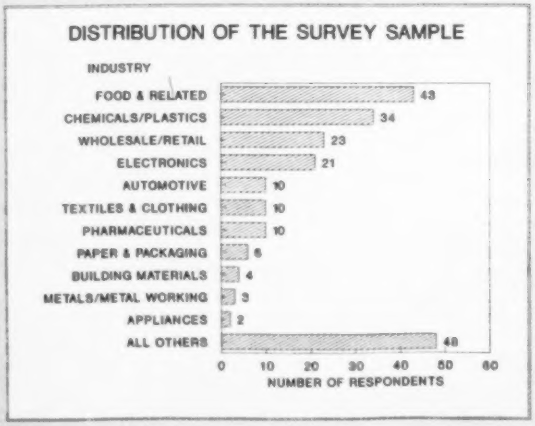

ORGANIZATION OF THE LOGISTICS FUNCTION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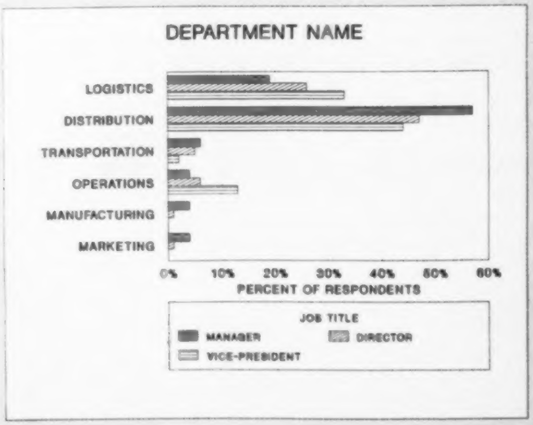

DEPARTMENT NAME

turing, logistics executives are substantially below that," says Masters. "They've been catching up, but that is starting to flatten." Marketing executives with the same level of experience, he notes, make 30 to 40 percent more than logistics executives. In certain industries, such as semiconductors, other professionals, such as engineers, are outpacing logistics compensation levels as well. LaLonde says there is also a fairly wide spread in pay within logistics from industry to industry. "The chemical industry will pay their directors of logistics as much as VPs make in other industries," he says.

The single most important determinant of compensation appears to be title (see chart p. 42, top). Educational background and size of the company are less important factors. "You would be ill-advised to bet that MBAs make more than non-MBAs with the same experience," Masters says. "And while there is a slight trend toward bigger companies paying more, it isn't something you'd want to bet on." Education does seem to matter more at the entry level, he adds. The median starting salary for an OSU logistics graduate is $28,000, while the starting salary for a masters-degree holder is $38,000.

The survey asked about annual raises, but since some respondents may have determined their raise based on a promotion, the data is inconclusive. In general, raises last year outpaced the rate of inflation.

Comparing the survey's compensation data to previous years yields some unsettling trends (see chart p. 42, bottom). Compensation for logistics managers has remained flat for about the past four years; in real dollars, Masters says, this category may even realize a slight drop in total pay. And while compensation at the director and VP levels has shown slow growth, these executives could also face a flattening, or even a downturn. "With the current financial and economic climate," Masters says, "there could be a dip in 1990."

Figure 3

LOGISTICS EXECUTIVE COMPENSATION (annual salary plus bonus)

JOB TITLE	HIGHEST THIRD	MIDDLE THIRD	LOWEST THIRD
Manager	$ 85,000	$ 60,000	$48,000
Director	112,000	85,000	64,000
Vice President	180,000	125,000	85,000

Figure 4

HISTORICAL COMPENSATION COMPARISON

Year	Manager	Director	Vice-President
1990	$60,000	$85,000	$125,000
1989	65,000	80,000	105,000
1988	57,000	75,000	122,000
1987	60,000	74,000	107,000
1986	–	–	–
1985	55,500	72,400	106,400
1984	54,800	70,800	93,900

What Does the Future Hold?

Cost containment appears to be number one on the agenda for logistics managers as we enter the 1990s. The fact that the survey was mailed out a week after Iraq invaded Kuwait seems to have impacted the responses to this question. Logistics costs, according to executives, was the number one factor affecting the future development of logistics (see chart on p. 44, top). Up until this year, customer service had been moving steadily up that list, and last year had assumed the top spot. Also, respondents projected a five percent increase in total logistics costs for 1991—driven largely by higher fuel prices (see chart on p. 44, bottom). "The Kuwait situation is causing people to be more conscious of cost," Masters says.

While relatively few respondents mentioned globalization as a factor that will affect logistics, it should be noted that some of those who mentioned logistics costs may have been thinking of globalization. Exports are up, and companies are increasing their overseas sourcing—both of which drive up logistics costs.

Workforce Issues

New to the survey this year were several questions relating to the logistics workforce. These questions explored the state of readiness of new workers. What is their ability to immediately make a contribution, to perform in a logistics environment?

"We've read a lot of literature," says Masters, "and heard reports on television about the decline in the ability of young people to cope with basic reading, writing and arithmetic skills. We see high dropout rates in schools. We see declining achievement test scores. And we see that many companies recognize that they have a tremendous problem with their new people, that they cannot get people who are qualified and can do the work that needs to be done. We see that as entry-level skills are going down, the requirements of the new jobs are rising."

Masters asks, how can companies

continued

have quality products and offer quality service to its customers if the skill level of the people entering the workforce is declining?

The first question asked whether executives were satisfied with the skills of the typical applicant for entry-level logistics jobs. There was healthy disagreement on this question; equal numbers of respondents said they were satisfied and dissatisfied with the skills of the typical entry-level applicant. While the survey did not break out differences in the responses by region or industry, LaLonde says that type of data is available in a study called "Workforce 2000" sponsored by the Hudson Institute (703-824-2048).

Next, respondents were asked whether the public education system has done a good job of preparing job applicants. This time, a majority (52 percent) said that public schools have failed to properly prepare students for the workforce. Are skill levels of job applicants lower than they were 10 years ago? Twenty-seven percent said yes, 31 percent said no. Could you attract better people by paying higher wages? Forty-four people said yes, 27 percent said no.

On the subject of training, companies agree that much needs to be done—but are reluctant to commit to programs of their own. When asked whether their companies had obtained remedial education for employees that need it—that is, training in basic skills—34 percent said they had, while 34 percent had not.

How much do respondents' companies spend on training? The average was $500 per year for each employee for job training, and $25 per year for each employee for remedial training. One reason the latter figure is so low is that not all employees require this type of training. Still, Masters expressed disappointment with spending in this area. "It's a pretty low level of effort to throw against this problem," he says. "Maybe management hasn't recognized the problem yet. But how can we aim for zero defects if our people can't add? How can we pursue quality if our people can't *spell* quality?"

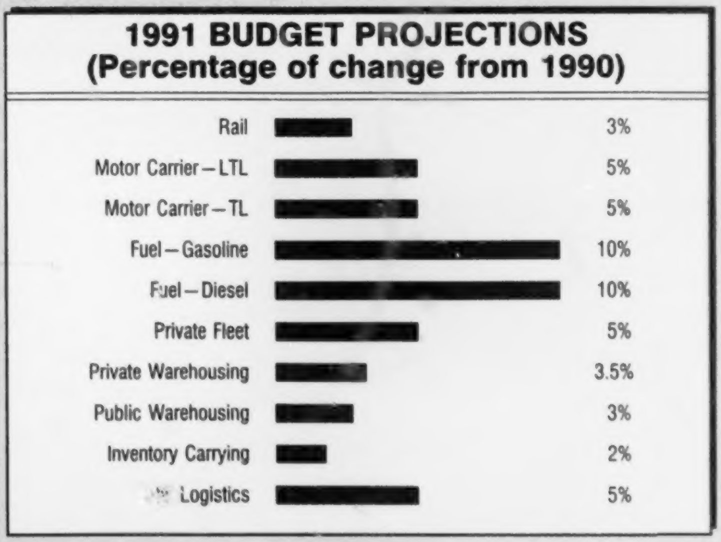
What are the hardest jobs to fill? On a scale of one to seven, with seven being the hardest, respondents said it was toughest to attract qualified supervisors (4.6). Mechanics (4.4) and drivers (3.8) were also difficult positions to fill. What requirement for workers is the hardest to satisfy? Transportation/distribution, communications and math skills topped this list. Also, executives said that on average, one in five applicants are rejected for having inadequate skills, while 10 percent of workers currently on the job can be characterized the same way. ■

Figure 7

FACTORS THAT WILL AFFECT THE GROWTH & DEVELOPMENT OF THE LOGISTICS FUNCTION

Factor	Response
Logistics Costs	22%
Customer Service	20%
Technology	15%
Competition	7%
JIT/QR/DSS	7%
Quality Performance	6%
Globalization	5%
Corporate Growth	4%
Management Support	3%
Integration	3%
Third Party Issues	2%
All Others	6%

Figure 8



1991 BUDGET PROJECTIONS (Percentage of change from 1990)

For more information on the career patterns survey, contact Ohio State at (614) 292-0331.

Malkin on Air Cargo

DON'T COUNT OUT THE AIR FORWARDERS

Besieged by integrated carriers and airlines that want closer ties to shippers, these middlemen will find ways to prosper.

By Richard Malkin, Air Cargo Editor

Are the scarlet macaw, yellow-billed cuckoo and Tennessee warbler—all endangered species—being joined by the airfreight forwarder?

Confronted by this question, the global airfreight industry scratches its head and reaches for a quick, educated guess that is long on gut feeling but short on analysis.

From years of interviews conducted throughout the world, it is possible to salvage a consensus opinion: The air forwarder will indeed be around, although in a somewhat altered state.

No one questioned the need for forwarders until the advent and instant success of Federal Express persuaded a few high-volume consolidators that the right way to go in a deregulated environment was to integrate their forwarding operations with airlift. The magic phrase was "door-to-door."

Make or Buy

This trend perplexed America's huge community of forwarders—some 1,260 firms and nearly 4,000 locations in the U.S.—who wondered among themselves how the forwarder-cum-carrier could justify its costs. That this line of reasoning was not far out of line was underscored by the hasty return to pure forwarding by some integrators who claimed they could buy airlift for less than it would cost them to produce their own.

DANZAS
AE6193UA

Swiss-based Danzas is now a major forwarder in the U.S.
Competition has intensified since foreign forwarders set up shop.

Overseas, forwarders were bemused. So long as it was confined to the U.S., it was regarded as an "interesting exercise."

These intermediaries lost much of their serenity when the integrators began sucking up domestic freight like vacuum cleaners, leaving them with a negligible portion of their home market. The forwarders, or "indirect air carriers," had handled half of the domestic U.S. airfrieght before air cargo deregulation.

But it wasn't until the integrators turned their attention to international markets (where the consolidator and cargo agent traditionally accounted for 90 to 95 percent of the traffic) that a violent shudder passed through the forwarding community. It was then that the industry's Cassandras sprang up like mushrooms after a rain and uttered their dark predictions.

It didn't help matters when one of the integrators stated in print that the middleman was doomed to extinction. Nor did Fed Ex's acquisition of Flying Tigers, and American Airlines' announcement of its intention of working directly with domestic shippers, allay anxieties.

By this time, the overseas forwarders were sending out warning signals of their own. Sensitive to the likes of Fed Ex, UPS, and Emery Worldwide, and acutely aware of the attractive-

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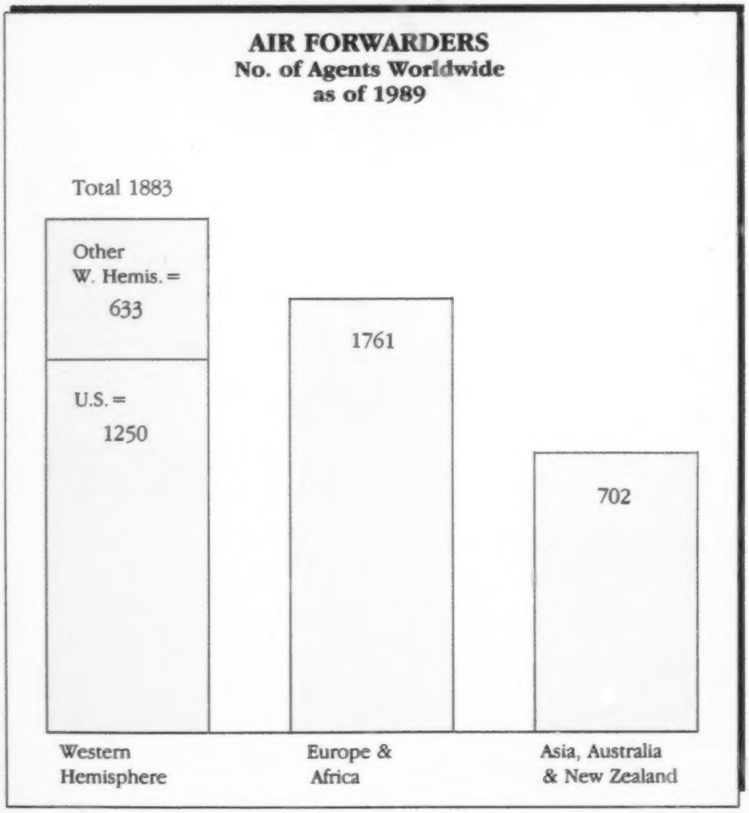
Fed Ex started the integrated carrier revolution
Integrators "sucked up freight like vacuum cleaners."



Source: IATA (C.N.S.)

ness of the soon-to-be single market, European forwarding agents sent up a cautionary cry that was the American version of "the Russians are coming!" UPS consistently maintained it was not interested in departing from its 70-pound limit, but it was difficult to find an airline or forwarder that accepted this as gospel.

If one sets the integrators aside, it is clear that the U.S. flag airlines, which as a group set a heady pace in postwar international airfreight development, today show pale shadows of their former muscle. Northwest Airlines is the sole U.S. passenger carrier with freighter capacity.

Although they denied it with righteous emphasis, it is a fact that behind closed doors more than a few overseas airlines debated the pros and cons of acquiring forwarders. Those which favored the idea saw it as the easiest and most effective way to control the ground link. Those opposed, apparently having the last word, bore down on the prospect of having freight diverted to competing forwarders. There actually were a couple of airline investments in Europe-based forwarders, but these were explained as purely financial ventures without structured operational ties.

Essentially, direct and indirect air carriers remain independent of one another.

A striking philosophical change is underway for the airlines and forwarders. Both want to meet the single-responsibility, door-to-door challenge posed by the integrators. The international airlines now openly avow that the most logical route to this goal is through closer cooperation with the forwarders.

Easier said than done. The admission that a form of unprecedented cooperation may be the answer merely begs the big question: *How?* No airline has yet spelled out what it has in mind. But there is little argument that the carriers—certainly the bigger, more cargo-oriented systems—would prefer to enter into ironbound deals with the forwarding industry's major multinationals. The

continued

The ranks of forwarders will contract. Some say by as little as 10 percent, others predict 50 percent shrinkage. Virtually no one suggests that the middleman is headed toward obliteration. There is expectation of a 25-35 percent forwarder shrinkage.
—Richard Malkin

forwarders would then afford extensive trucking services in the markets served. Some airlines and forwarders are known to have engaged in exploratory talks.

Whatever evolves as direct and indirect air carriers convert to viable door-to-door freight systems, it is clear that they cannot hope for the kind of competitive might they seek without a global communications grid in place. Precedent will be established early next spring when international airlines and cargo agents, under the aegis of Cargo Network Services (CNS), the U.S. subsidiary of IATA, hold a closed, three-day "partnership conference." This pow-wow will attempt to redefine their relationship in the changed competitive environment and search for avenues to achieve greater closeness.

Enough Blame to go Around

It is rash and simplistic to suggest that the rise of the integrator set in motion a process by which the forwarder population will decline in direct proportion to integrator growth. If shrinkage occurs, the blame cannot be placed exclusively at the integrator's doorstep. Other factors have also contributed to the pressures felt by forwarders.

Large, deep-pocketed transportation companies, convinced that their respective El Dorados are in tandem with the globalization of industry, reached for added clout through merger and acquisition. Medium-sized forwarders also found themselves in the precarious position of being too small for world class status, but too big to be included in the most numerous of forwarder categories—the single-location, family-operated enterprise. The medium-sized forwarders also seek merger to improve competitiveness.

Costly computerization, increasingly an imperative for modern forwarders, sometimes proved to be the last straw for struggling agents.

Competition has become more intense, especially with more foreign-based forwarders setting up shop in the U.S. To complicate matters, airlines have become bolder in seeking hands-on relationships with high-volume shippers. For the airlines, this strategy also shores up their defenses against a forwarder decision to shift traffic to a competing carrier.

RICHARD MALKIN
JOINS DISTRIBUTION

With this issue, Richard Malkin joins DISTRIBUTION as a monthly contributor writing on air cargo. Malkin is known throughout the world as the dean of air cargo journalists. He began writing about air transport of freight in 1947 when he covered the Berlin Air Lift. He has covered airfreight exclusively ever since. He travels the world interviewing air cargo executives and major air shippers. If you have suggestions or questions, contact him directly by writing or calling Richard Malkin, 265-08 81st Ave., Floral Park, NY 11004, (718) 343-7718

So we return to our opening question: What is the future of the forwarder? Industry leaders generally hold that the ranks of forwarders will contract. Some say by as little as 10 percent, others predict 50 percent shrinkage. Virtually no one suggests that the middleman is headed toward obliteration. Thus, it is fair to say there is expectation of 25-35 percent forwarder shrinkage.

How expert are these prognosticators? Whether their predictions can be translated into hard numbers, absent a scientific survey, stimulates new questions. CNS, which administers America's internationally active forwarders, says that since its inception six years ago the total number of endorsed cargo agents has *increased*. In an average year, CNS says, approximately 100 endorsements are cancelled, but there is an equivalent number of new entrants.

The most recent surveys of distribution executives reflect a continued reliance on forwarders, especially in complex international markets. "I haven't found anyone who can match my forwarder's service," says one shipper. "I need him."

Finally, a word about the small forwarder. Armed with a limited number of clients, the small forwarder cherishes each one. This type of forwarder provides what is probably the ultimate in personalized service. Many of these small operators have prospered by keeping costs low and carving out profitable niches. This assures them great longevity.

An endangered species? Dodo-like extinction is not a serious consideration. If the forwarder population shrinks at all—and this is patently arguable—the only certainty is that its *modus operandi* will change. Forwarders will continue to adapt to technological advances, client strategies and marketplace trends. ■

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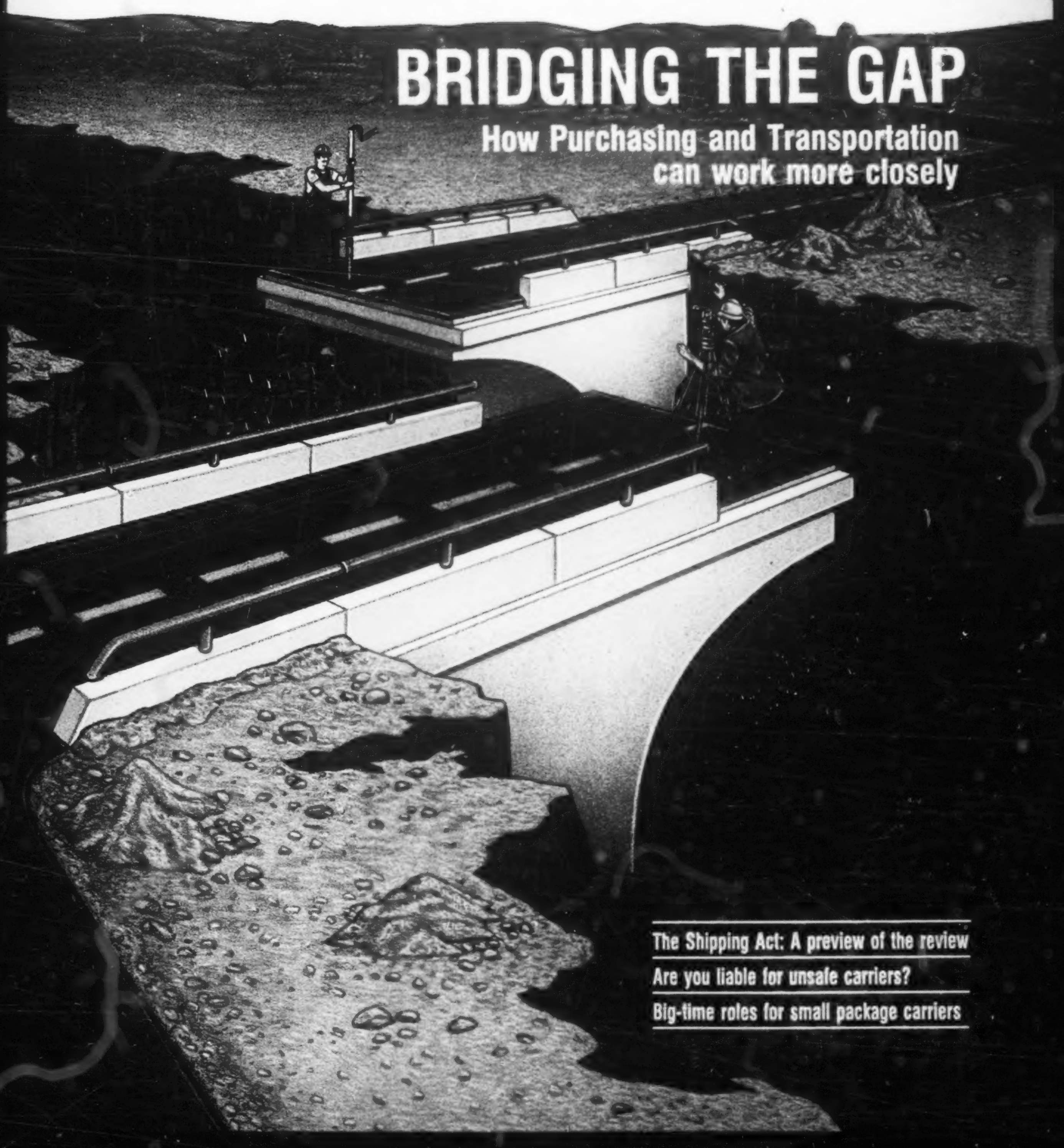

BRIDGING THE GAP

How Purchasing and Transportation can work more closely

The Shipping Act: A preview of the review

Are you liable for unsafe carriers?

Big-time roles for small package carriers

MARCH 1991

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THE TRANSPORTATION & BUSINESS LOGISTICS MAGAZINE

VOL. 90, NO. 3

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Bridging the gap between purchasing and transportation can pay big dividends. Yet for many companies, the team effort required to hit the payoff remains elusive. The question is how to "cross-pollinate" the two disciplines so that each can take advantage of the other's expertise in order to make more cost-effective transportation purchasing decisions.

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INBOUND BUYING HABITS DIE HARD

A new study shows that many companies now believe the best way to buy transportation is to integrate purchasing and transportation. Makes sense. The problem is, a lot of firms still haven't got the message.

By Jay Gordon, Executive Editor

Purchasing and transportation managers are slowly discovering that, together, they have the power to control inbound transportation cost and service.

For many—those that have traditionally left transportation decisions to the vendor—this comes as something of a revelation. Prior to the deregulation of truck transportation in 1980, freight rates were regulated, so it didn't matter whether you or your vendor arranged the transportation. You'd pay the same.

Today's purchasing and transportation managers, however, are free to negotiate deals with carriers that can yield substantial improvements in cost and service. The problem, however, is that old habits, and old misconceptions, die hard. For one reason or another, many of these professionals continue to forgo the opportunity to control inbound transportation.

That much is evident in the results of "Purchasing's Role in Transportation Decision Making," a new study from the Center for Advanced Purchasing Studies sponsored by DISTRIBUTION Magazine. The survey results can be broken down into three main areas:

- **Current purchasing practice.** For what percentage of transactions are companies controlling the inbound freight move? How does this percentage differ when total firm activity versus group or division activity are taken into consideration?
- **The level of purchasing's involvement in key decision making areas.** What transportation-related activities are purchasing managers actively involved in? What factors are important to purchasing in the selection of transportation modes and carriers?
- **The effects of organizational structure on transportation decision making.** Who has the responsibility for transportation decisions? Is there a connection between organizational structure and companies' ability to control inbound transportation? What organizational structure enables firms to make the best transportation decisions?

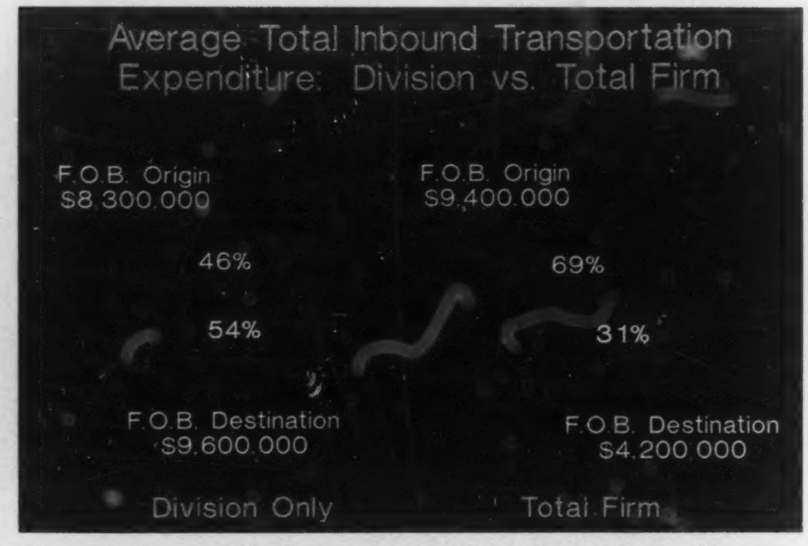

Fig. 1—Is there a lack of transportation know-how at the local level?

Current Purchasing Practice

Companies answering as a division or group only say they spend 46 percent of their annual inbound transportation dollars on freight that was shipped FOB-Origin—freight that they controlled. The other 54 percent of the freight was shipped FOB-Destination (Fig. 1).

For total firm responses, FOB-Origin terms covered 69 percent of the total annual inbound freight expense; the other 31 percent was FOB-Destination. When total firm and division/group responses are taken together, the breakdown is 57.5 percent FOB-Origin, 42.5 percent FOB-Destination.

A quick, if oversimplified, review may be in order. The term "FOB-Origin" implies that the buyer owns the goods in transit and is thus able to control their transportation. FOB-Destination means the seller owns the goods in transit and controls the transportation. While most of the

A CLOSER LOOK AT CAPS

An affiliation of the National Association of Purchasing Management and the College of Business at Arizona State University, CAPS provides advanced research on purchasing and materials management issues. "Purchasing's Role in Transportation Decision Making" represents CAPS' effort to redefine purchasing strategy in light of the dramatic changes in transportation since deregulation. DISTRIBUTION Magazine was a leading underwriter of this vital research effort.

"We feel it is important to identify trends that may reshape the future direction of purchasing with respect to overall company organization and strategy," says CAPS Director Dr. Harold E. Fearon. "In addition to assessing purchasing's role in transportation decisions, this research provides both purchasing and transportation professionals with a tool that will enable them to make better decisions in the future and increase their awareness of the changing operating environment." If you would like a free copy of the study "Purchasing's Role in Transportation Decision Making," please fill in number **603** on the Reader Service Card in the back of this issue.

firms responding to the CAPS study were able to report dollar amounts for inbound transportation, it is clear that the problem of identifying these costs cannot be overlooked. Determining what the firm spends on inbound freight is especially difficult when delivered pricing is used, since freight charges are simply rolled into the price of the goods.

These numbers can be interpreted in two ways. The fact that 57 percent of the firms use FOB-Origin terms indicates that the practice of buying goods based on a delivered price has become outmoded. Yet some 43 percent of the companies surveyed still use FOB-Destination terms. There are some legitimate reasons for this, but it is clear that a lot of companies have yet to get the religion on managing inbound freight.

It is interesting to note the difference in responses for entire firms versus division/group only. Respondents answering for the entire firm indicate a greater likelihood that their company will control inbound transportation. CAPS Research Associate Julie J. Gentry explains that there may be a lack of transportation expertise at the decentralized levels of these organizations.

Purchasing's Involvement

Purchasing managers are involved in a wide range of transportation-related activities (Fig. 2). In most cases, their level of involvement is increasing. Out of 10 transportation activities, the highest degree of involvement, naturally, was in inbound transportation (90 percent of responses). Other activities purchasing is involved in: choice of mode (88 percent), choice of carrier (85 percent), price determination (67 percent), rating carrier performance (67 percent) and outbound transportation (49 percent).

The high degree of purchasing involvement in key transportation areas indicates that many firms know the benefits of integrating transportation and purchasing expertise. Also, Gentry says, a high degree of involvement in rating carrier performance indicates that purchasing continues to be an integral part of the transportation process long after the carrier is chosen.

Service Ahead of Price

The most influential factor in determining the mode of transportation selected is the required delivery date, which received 37 percent of total possible ranking points. That was followed by the cost of transportation (17 percent), reliability and service quality (14 percent), shipment size (11 percent) and time in transit (10 percent).

On-time delivery topped the list of factors which influence carrier selection (25 percent of possible ranking points). Rates again was second (18 percent) followed by geographic coverage and time in transit (both 10 percent), shipment tracing and care in handling (both 6 percent), financial condition of the carrier (5 percent) and door-to-door deliveries (4 percent).

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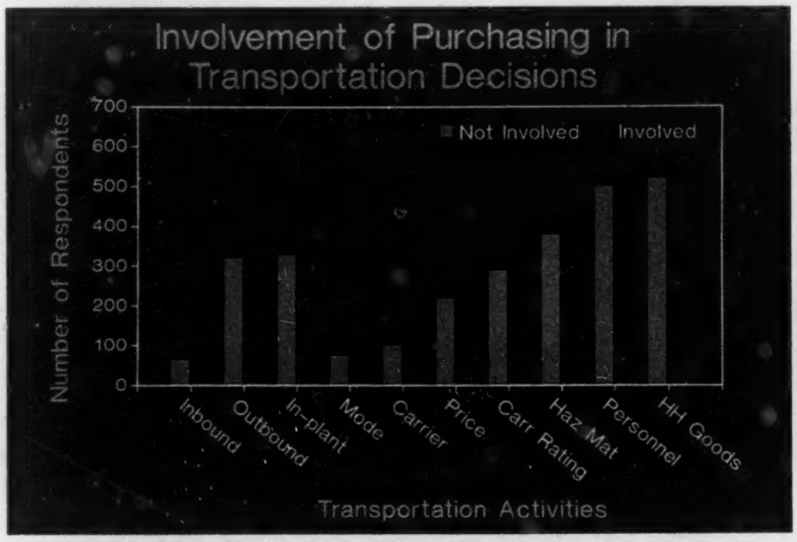

Fig. 2—Many firms know the benefits of integration.

SURVEY DEMOGRAPHICS

Data for CAPS' Transportation Purchasing Survey was gathered in the fall of 1990 from 678 U.S. companies covering 54 industry groups. Sixteen percent of these companies had 1989 sales of less than $10 million; 28 percent had sales of $10 million to $50 million; 33 percent reported sales of $51 million to $500 million; 7 percent were in the $501 million to $1 billion range; 10 percent had sales of $1.1 billion to $5 billion; and 6 percent had sales of over $5 billion.

CAPS wanted to see if transportation purchasing practices varied according to whether respondents reported data for their entire firm or only for their division or group. The responses were evenly split; of the 678 organizations, 340 (50.1 percent) submitted data for a division or group only, while 338 (49.9 percent) gave data for the entire firm.

The results here are consistent with similar studies conducted for outbound transportation. Purchasing managers, like their counterparts in transportation, place greater emphasis on service factors than on cost. Because of technological advancements and marketing innovations, decisions on modes and carriers are far more complex today. Emphasizing service over cost makes it all the more important that these managers control inbound transportation and negotiate service standards with inbound carriers. As noted earlier, more and more managers are becoming involved in the carrier evaluation process to make sure these standards are met.

Organizational Relationships

Companies are organized in a number of ways to make inbound transportation decisions (Fig. 5, p. 42). The most common scenario, however, has purchasing sharing the decision-making responsibility with the traffic/distribution department (34 percent of the companies surveyed). In almost as many firms (27 percent), that responsibility rests solely with a buyer in the purchasing department. Other companies responded that the responsibility rests within purchasing but with someone other than a buyer (13 percent), while 15 percent said the responsibility rests outside purchasing altogether. In some companies the responsibility is shared by purchasing and sales/marketing, while others use a committee that includes purchasing, transportation and other departments.

Some interesting differences arise

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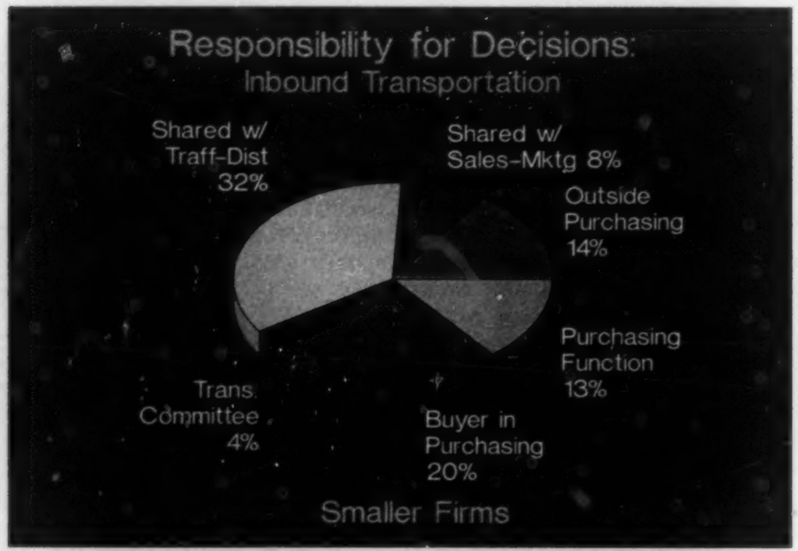


Fig. 3—Small firms give buyers more transportation responsibility.

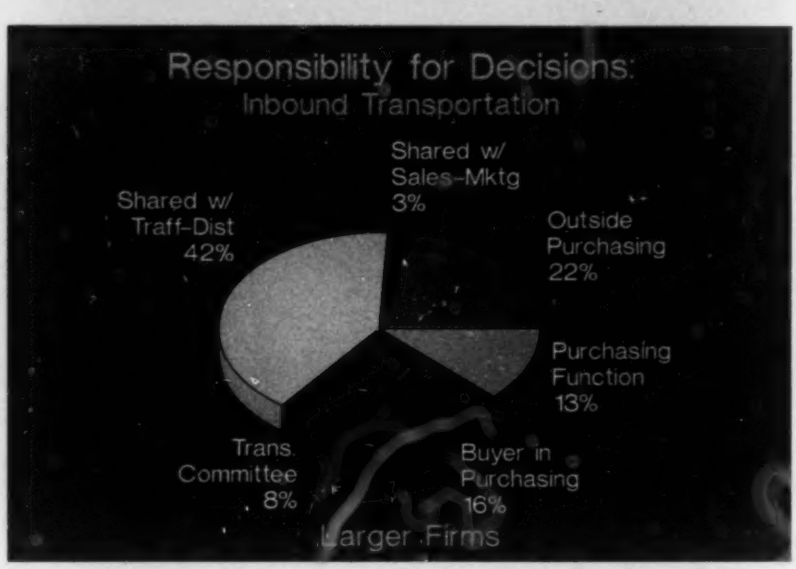
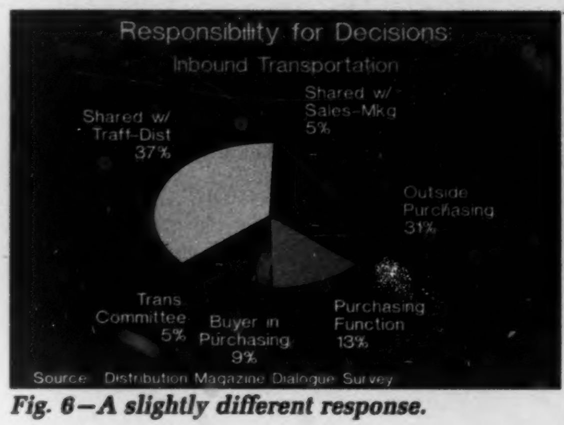


Fig. 4—Large companies are more likely to share the responsibility.

IN TRANSPORTATION DECISION MAKING, A LOT OF OLD BIASES STILL EXIST

DISTRIBUTION surveyed its readers to find out how *their* firms are organized to make transportation decisions. Our results were similar to CAPS'—with a notable exception. Only 15 percent of the CAPS respondents said responsibility for transportation decisions rests outside purchasing. In our survey, 31 percent said purchasing isn't involved (Fig. 6). Also, 27 percent of the CAPS respondents said such decisions were made by a buyer in purchasing. Only 9 percent of our readers said they're organized this way. Why the difference? CAPS surveyed a select number of purchasing managers; DISTRIBUTION readers hold a variety of purchasing and traffic/distribution titles. In fact, title is a good indicator of how a person will define purchasing's role in transportation:

- "Let traffic know what needs to be picked up. It's their job to bring the freight in." (distribution mgr.)
- "In most cases the traffic department is closer to the carrier community and what is happening in the transportation environment. In many cases, procurement personnel do not concern themselves with the cost of moving the goods." (traffic mgr.)
- "Transportation decisions are increasingly recognized as specialized purchasing decisions. The role of purchasing should increase." (dir. of materials)



Source: Distribution Magazine Dialogue Survey

Fig. 6—A slightly different response.

- "Purchasing and traffic must be a shared role. Traffic employees should be aware of the negotiating skills that Purchasing uses and Purchasing must understand and use routing guides." (senior buyer)
- "Transportation and Purchasing both serve the company's prime function—having material available for manufacture or resale. Both must communicate with the goal of maximizing profit on sales, not just cutting costs." (distribution mgr.)

when the results for smaller and larger firms are compared (Fig. 3 & Fig. 4, p. 40). One conclusion, albeit a predictable one, is that larger firms are generally more likely to spread the responsibility for transportation decisions among several disciplines. These decisions are made entirely outside of the purchasing function in more larger firms than smaller ones. More larger firms share the responsibility with traffic/distribution, and twice as many larger firms use committees to make decisions. Smaller companies, on the other hand, are more likely to have a buyer within the purchasing department as the sole transportation decision maker.

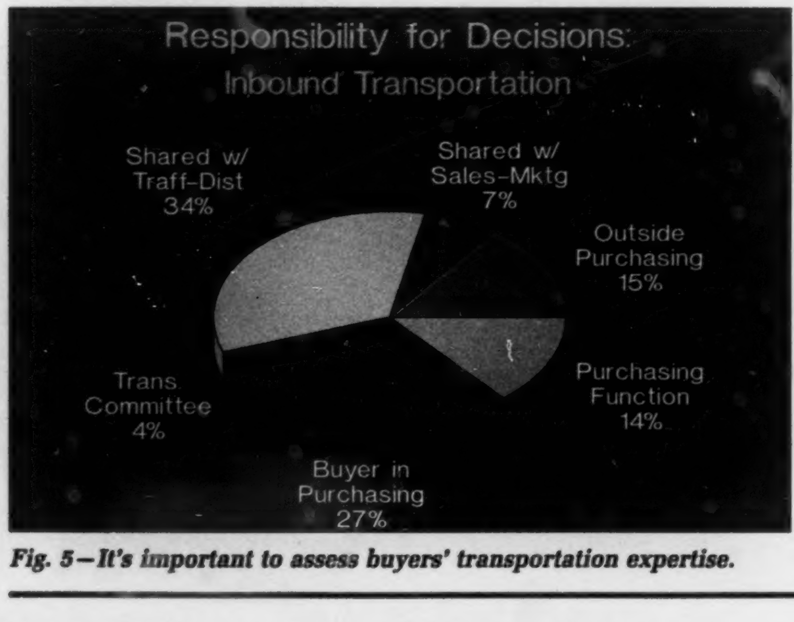


Fig. 5—It's important to assess buyers' transportation expertise.

Sharing the responsibility for transportation decisions enables companies to take advantage of the expertise found in purchasing *and* transportation. Those firms that leave the responsibility with a buyer need to assess the level of transportation knowledge possessed by that person. If a buyer is avoiding involvement in transportation by purchasing on a delivered price, opportunities for cost and service improvements may be slipping away.

Smaller firms tend to have a higher percentage of buyers making the transportation decisions, yet the data shows little variation in the percentage of FOB-Origin transactions versus FOB-Destination transactions by size of firms. This could indicate that buyers in small companies may, out of necessity, demonstrate more transportation expertise than buyers in large companies. ■

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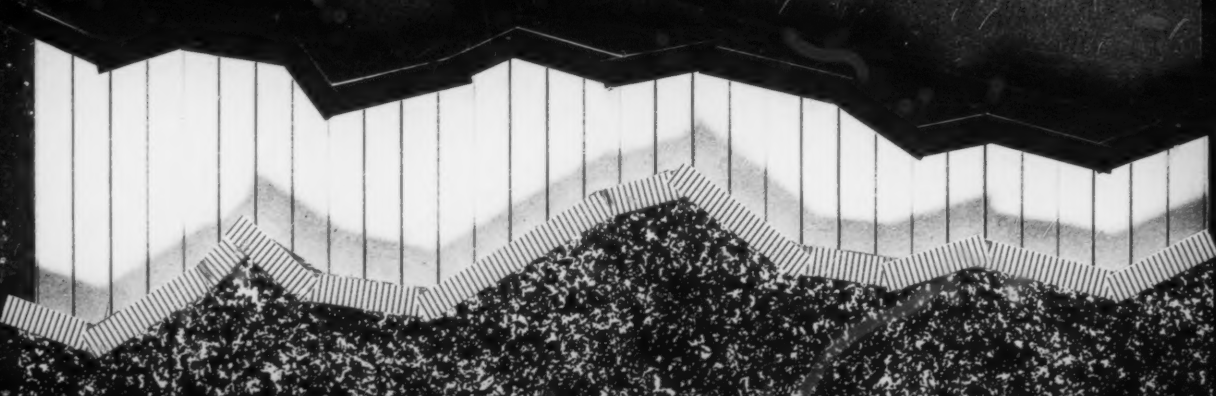

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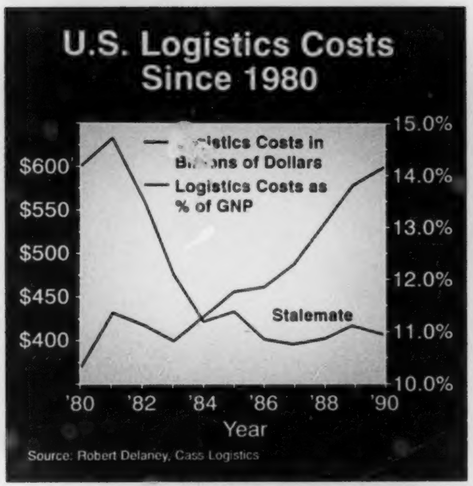
Logistics: Our Economy's Engine

Logistics saved the U.S. from a deeper recession, and it could shift our economy into high gear if more deregulation was enacted.

By Thomas A. Foster, Esq., Editorial Director



Source: Robert Delaney, Cass Logistics

Logistics as a percent of GNP has not improved since 1986.

The recession of 1990 and 1991 marks the end of our nation's longest post-war economic boom. But this period will also be known as the time when top business executives, economists and government leaders saw graphic proof of how important logistics has become to managing our economy.

Were it not for the ability of logistics managers to tightly control inventories throughout the supply chain, our current economic slump would be much worse.

When we entered this recession last summer, the combination of a war, soaring fuel prices, and a severe credit crunch could have pushed us into a two- or three-year downward spiral. But less than a year into this recession, leading economic indicators show production is increasing, suggesting that we are back on the road to recovery.

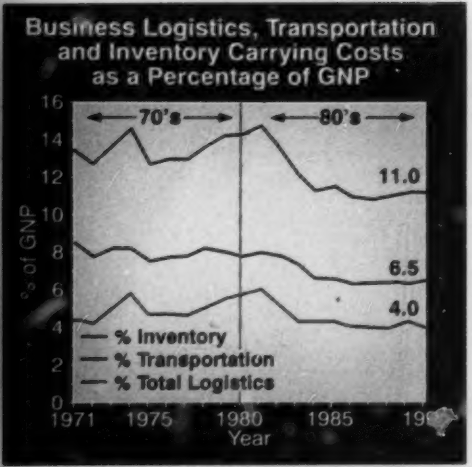
Logistics management deserves much of the credit. Shippers learned how to keep inventory levels lean during the prosperous years of the 1980s. When slackening demand and rising costs signaled a recessionary slump last summer, manufacturers in

continued

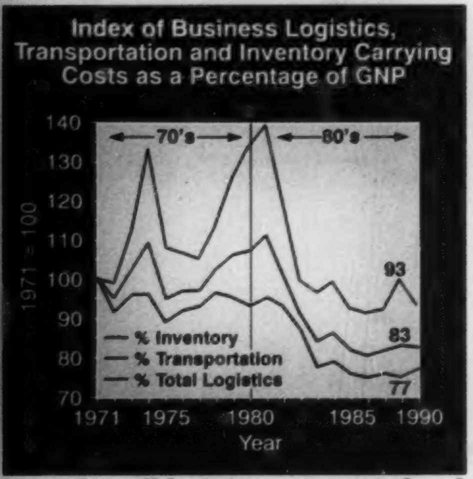
U.S. LOGISTICS COSTS
($ Billion Except GNP)

Year	GNP $ Trillion	Value of Inventory	Inventory Carrying Rate	Inventory Carrying Costs	Transportation Costs	Administrative Costs	Total U.S. Logistics Cost	Logistics % of GNP
1971	1.08	189	.250	47	91	5	143	13.2
1972	1.25	215	.250	54	97	6	157	12.6
1973	1.33	240	.272	65	108	7	180	13.5
1974	1.43	286	.290	83	116	8	207	14.5
1975	1.55	288	.253	73	116	8	197	12.7
1976	1.72	319	.250	80	133	9	222	12.9
1977	1.92	351	.250	88	150	10	248	12.9
1978	2.16	397	.270	107	175	12	294	13.6
1979	2.42	444	.300	133	193	14	340	14.1
1980	2.63	483	.317	153	205	15	373	14.2
1981	2.94	520	.343	178	236	17	431	14.7
1982	3.07	520	.309	161	240	17	418	13.6
1983	3.31	510	.279	142	244	15	401	12.1
1984	3.78	546	.291	159	250	16	425	11.2
1985	4.00	645	.268	173	265	18	456	11.4
1986	4.24	657	.261	172	271	18	461	10.9
1987	4.53	683	.263	180	288	19	487	10.8
1988	4.87	735	.267	196	313	20	529	10.9
1989	5.23	780	.292	228	331	22	581	11.1
1990	5.46	810	.272	221	356	23	600	11.0

Source: Robert Delaney, Cass Logistics



Transportation is the largest element of total logistics costs, and is the key to greater logistics productivity.



When all logistics costs are indexed, transportation costs are the only expenditures that are edging higher.

all sectors were not burdened with months of inventory that had to be liquidated. Industrial production and employment were cut back, but only for two or three quarters.

According to Robert V. Delaney, executive vice president of Cass Logistics, our ability to better manage inventory was the one bright spot in an otherwise dismal 1990. Delaney calculates that inventory carrying costs in 1990 of $221 billion dropped 3.17 percent from the 1989 figure of $228 billion.

Cass Logistics is a freight payment and logistics information subsidiary of Cass Commercial Corp., a bank holding company in St. Louis. Delaney has charted U.S. logistics costs for over 20 years.

Delaney's annual *State of Business Logistics* reports that the U.S. spent $600 billion on logistics in 1990—up 3.27 percent from the $581 billion spent in 1989.

Inventory carrying costs of $221 billion represents the largest component of the 1990 business logistics expenditures. The interest portion of inventory in 1990 alone amounted to $66 billion. Delaney calculates the interest by multiplying 8.2 percent (the annualized commercial paper rate) times $805 billion—the total value of inventories held by manufacturers, wholesalers and retailers during 1990. Taxes, obsolescence and depreciation on inventory accounted for $84 billion. The cost of warehousing inventory accounted for $61 billion. This figure includes the cost of storing dry and temperature-controlled goods, agricultural commodities and bulk petrochemicals. Of this $61 billion, $8 billion is public and terminal warehousing and $53 billion is private warehousing.

A small, but important element of logistics costs is administration, which is primarily made up of salaries of all people involved with logistics on the shipper side of the industry. The 1990 figure was $23 billion compared to $22 billion in 1989. The increase was less than the rate of inflation, suggesting that logistics staffs continued to shrink in 1990.

The last and most important component of logistics costs is transportation. Total transportation costs in 1990 were $356 billion, up 7.5 per-

continued

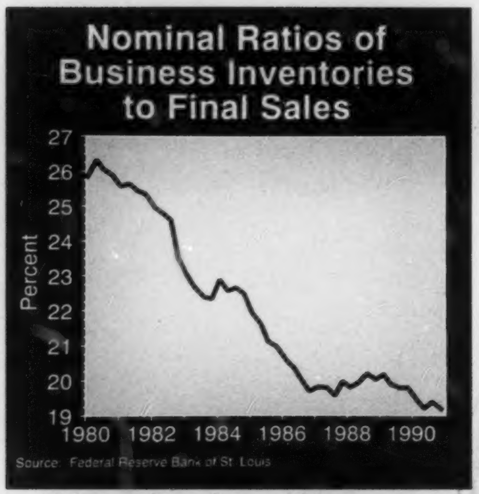
COMPONENTS OF 1990 LOGISTICS COST

	$ Billions
Inventory Carrying Costs	
Interest	66
Taxes, Obsolescence, Depreciation	84
Warehousing	61
Subtotal	221
Transportation Costs	
Motor Carriers	
Public and For Hire	77
Private and For Own Account	87
Local Freight Services	113
Subtotal	277
Other Carriers	
Railroads	32
Water Carriers	21
Oil Pipelines	9
Air Carriers	13
Subtotal	75
Shipper Related Costs	4
Distribution Administration	23
TOTAL LOGISTICS COST	$600

Source: Robert Delaney, Cass Logistics

Source of Logistics Savings	$ in Billions
Inventory Carrying	$30
Truck Transportation	30
Railroading	5
TOTAL	$65

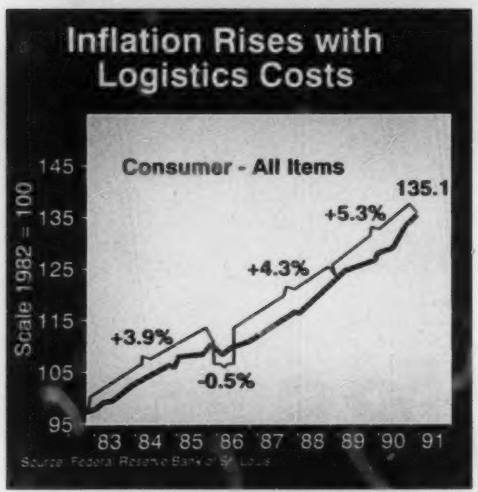
Source: Robert Delaney, Cass Logistics



Nominal Ratios of Business Inventories to Final Sales

Source: Federal Reserve Bank of St. Louis

Shippers have been able to constantly reduce inventory levels since 1980, but the rate of improvement is slowing.



Inflation Rises with Logistics Costs

Source: Federal Reserve Bank of St. Louis

Slackening logistics productivity is pushing up inflation, as seen by consumer price increases.

EC Single Market Benefits	**Billion ECU**
Trade Barriers	11 - 13
Manufacturing/Distribution Productivity Barriers	78 - 98
Competitive Economies	85 - 147
Total	174 - 258

Source: Robert Delaney, Cass Logistics

cent from 1989 levels of $331 billion.

This increase in transportation costs alarms Delaney, who sees the productivity gains made by transportation in the early 1980s as a result of partial deregulation quickly eroding.

"We are at a stalemate today in transportation productivity," says Delaney, who points out that business logistics averaged 14 percent of GNP between 1978 and 1980, with 1981 being our worst year at 14.1 percent of GNP.

Delaney says the forces of competition took over in 1982 as trucking and rail deregulation lowered transportation costs and enabled shippers to maintain lower inventory levels because of the availability of more reliable transportation. In fact, Delaney claims deregulation removed $65 billion of logistics costs in the five years immediately following deregulation. So by 1986, business logistics had declined to only 10.9 percent of GNP.

"But logistics costs have stood on that plateau for the past five years," says Delaney. "The question before us is, after five years of steep decline right after deregulation, is a five year plateau in logistics productivity rational? Or, has the protection that remains in our transportation industry produced a stalemate?"

Delaney claims more deregulatory legislation is the boost the economy now needs.

"If Congress enacts the Bush Administration's Surface Transportation Assistance Act without further delay," says Delaney, "we can operate our way out of this recession and into economic recovery."

Delaney focuses on interstate and intrastate trucking deregulation as the catalyst for recovery because motor carriers represent the largest single element of transportation costs. He claims costs for truck carriers are eight times greater than rail carriers and four times greater than the costs for all other transportation modes combined.

As an example of the direct link between deregulated transportation and lower inventory levels, Delaney points to the large safety stock levels held by U.S. industry before 1980.

"During the 1970s, variable transit times accounted for 40 percent of the lead time required in inventory replenishment formulas," he says. "By 1985, the variability of transit times was gone. Trucks were crossing the country in three days. Ford reduced inventory by $750 million, Chrysler by $200 million, Harley Davidson by 38 percent. Inventory turnover rate at Lever Brothers doubled. The declining slope of the nominal sales to inventory ratio means that we currently have $200 million less inventory investment in our business logistics system relative to final sales than we did in 1980."

Delaney says our partially deregulated transportation system has already shown how powerful a tool transportation and logistics can be to manage inventory.

"Procter & Gamble has a partnership arrangement with Wal-Mart where Wal-Mart reserves shelf space to display P&G products," says Delaney. "P&G guarantees Wal-Mart that no store will ever run out of these items. In this cooperative program, inventory turnover ranges between 100 and 120 times a year, and it is accomplished with precision transportation."

Another important element of our national economy that Delaney sees tied to transportation is energy consumption. He points out that better transportation productivity can drastically improve energy efficiency.

"Transportation accounts for 60 percent of our energy consumption," says Delaney. "Competition and productivity since 1980 have enabled us to rationalize the inter-city ton-miles that are required to operate our business logistics system.

"Our national policy must focus on reducing inter-city ton-miles, conserving energy, lowering costs and producing the best value for the consumers rather than protecting service suppliers," says Delaney.

As an example of how transportation can increase energy efficiency by cutting unnecessary inter-city trucking movements, Delaney cites Ross Laboratories, a leading manufacturer of health care products.

"Ross ships 80 truckloads a day from its five plants," says Delaney. "Most of the trucks loaded by Ross

continued

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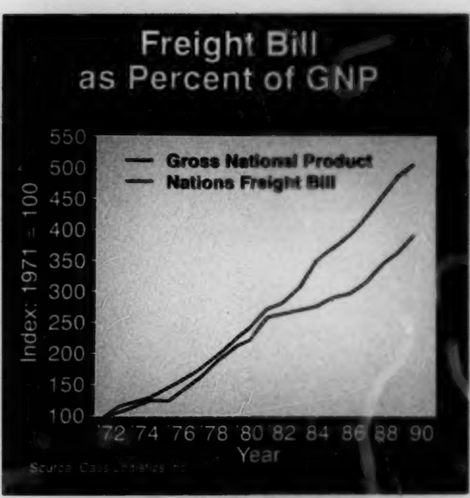
Delaney sees the 1990s as a make-or-break period for the U.S. economy because of the growing competition U.S. companies face from Asia and Europe. He says that during the 1990s the Europeans will cut $100 billion out their manufacturing and distribution costs. They will improve their competitiveness by another $158 billion by removing tariffs and other competitive barriers.

"The total forecast benefits will improve EC productivity by five to seven percent and create two million new jobs," says Delaney. "From Berlin to Bucharest, from Manchester to Milan, reform will start slowly and take at least a decade to achieve. But it will result in a single injection of productivity greater than occurred anywhere in the world since World War II.

"It's time for Congress to remove regulatory protection and tell industry to get ready for business in the demanding 1990s," says Delaney.

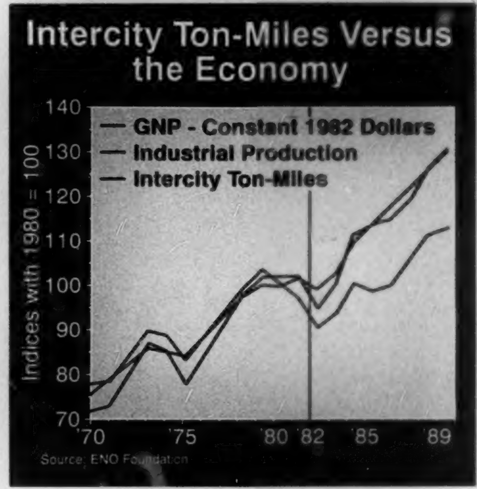
As an example of how a "world class" U.S. company can compete globally, Delaney points to 3M as a model for success. In 1983, 3M had 1,000 carriers, but by 1990 only 30 core carriers accounted for 68 percent of 3M transportation expenditures, he says.

"3M did not focus on price in selecting its carrier partners," says Delaney. "Real cost reduction was a modest 7.5 percent. Instead 3M focused on service to accelerate inventory turnover. On-time performance was improved 28 percent. In 1983, the carriers provided on-time delivery only 75 percent of the time. By working with its partnership carriers, on-time performance reached almost 98 percent in 1990. That is how you become world class. That is why we must enact the productivity provisions of the Bush highway bill." ■



Source: Cass Logistics Inc

Total freight costs grew at a slower rate than GNP during the 1980s, but these costs are again climbing.



Source: ENO Foundation

More productive transportation will keep ton-miles down as GNP and production increase.

"In order to improve our world competitiveness, we must drive U.S. Logistics costs to below 10 percent of GNP and keep it there."

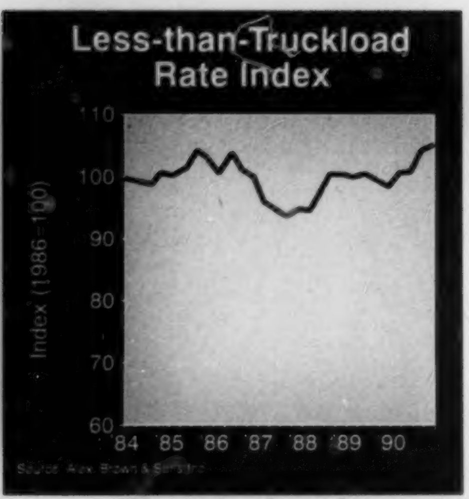
	1981	1990	Goal
Transportation	8.0	6.5	5.8
Inventory	6.1	4.0	3.8
Administration	.6	.5	.3
TOTAL	14.7	11.0	9.9

Source: Robert Delaney, Cass Logistics

Holding The Line On LTL Rates

LTL carriers earned good profits in 1990, and they could still make 1991 an acceptable year if they can hold the line on rates.

By Thomas A. Foster, Esq., Editorial Director



Source: Alex. Brown & Sons Inc.

LTL carriers have shown price discipline in 1990 and 1991.

For the nation's less-than-truckload carriers, 1990 financial performance was surprisingly good considering the fourth quarter brought a slowing economy and increasing fuel prices.

Nearly all major LTL carriers in 1990 enjoyed healthy increases in revenue and operating ratios that improved by a point or more. Net income—profitability after taxes and interest payments—was especially strong in all areas except the West.

So far, of course, 1991 has been a different story, but an economic turnaround could save LTL carriers from complete disaster.

For both 1990 and 1991, the key to success for the LTL industry has been pricing discipline, according to George Robertson, an analyst with the Baltimore brokerage firm of Alex. Brown & Sons.

"Even in these tough times, there has not been a return to the rate dis-

continued

NATIONAL LTL CARRIERS — 1990 vs. 1989 (Millions of Dollars)

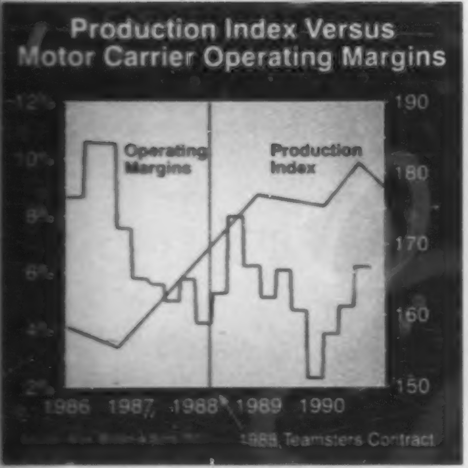
Rank	Carrier	1990 Revenue	1989 Revenue	% Change	1990 NI	1989 NI	% Change	1990 OR	1989 OR	Change
1.	Yellow Freight	2278.54	2189.64	+4.06	110.15	36.87	+198.76	94.50	98.30	+3.80
2.	Consolidated Freightways	2080.78	1894.95	+9.81	53.27	94.84	-43.83	95.20	95.00	-0.20
3.	Roadway Express	1965.20	1835.50	+7.07	91.51	83.82	+9.71	94.10	95.40	+1.30
4.	Overnite	801.83	697.78	+14.91	54.54	46.43	+17.47	90.60	91.00	+0.40
5.	ABF	750.89	630.14	+19.16	1.10	-10.34	NM	95.10	96.90	+1.80
6.	Carolina Freight	572.22	538.89	+6.19	0.84	1.43	-41.38	98.40	98.60	+0.20

Key: NI=net income; OR=operating ratio; NM=not meaningful
Source: ICC

INTERREGIONAL LTL CARRIERS — 1990 vs. 1989 (Millions of Dollars)

Rank	Carrier	1990 Revenue	1989 Revenue	% Change	1990 NI	1989 NI	% Change	1990 OR	1989 OR	Change
1.	Conway Transportation	484.84	383.42	+26.45	29.93	33.42	-10.44	88.80	85.80	-3.00
2.	Preston	404.56	366.94	+10.25	2.42	2.22	+9.01	98.60	98.80	+0.20
3.	Central Transport	265.26	276.95	-4.22	-719.00	2.81	NM	99.60	99.20	-0.40
4.	Watkins	248.03	204.80	+21.11	6.31	2.56	+146.48	93.80	95.70	+1.90
5.	Jones Truck Line	239.95	214.58	+11.82	-5.19	-1.16	-347.07	99.00	96.90	-2.10
6.	NW Transport	223.05	181.52	+22.88	11.58	8.15	+42.09	92.00	93.70	+1.70
7.	ANR Freight System	169.03	416.35	-59.40	-50.74	-17.58	-188.72	140.90	105.30	-35.60
8.	Churchill	161.00	145.01	+11.03	2.35	2.25	+4.04	98.00	97.80	-0.20
9.	Old Dominion	147.32	127.69	+15.37	4.38	1.30	+236.92	92.60	95.10	+2.50
10.	FFE Transportation	130.91	107.21	+22.11	1.44	2.02	-28.71	97.90	96.90	-1.00

Key: NI=net income; OR=operating ratio; NM=not meaningful
Source: ICC



LTL margins haved tracked production since the 1988 Teamster contract.

counting that has hurt LTL operating margins in the past," says Robertson.

The national and interregional carriers did especially well in limiting discounting in 1990 and so far in 1991. "The weakest sector in terms of pricing has been the regional carriers in the Midwest that were especially hurt by the collapse of the automotive industry," he says.

Even soaring fuel prices last winter have not been a major factor in carrier profitability, says Robertson. Fuel surcharges in the fourth quarter allowed LTL carriers to recoup most if not all of the additional costs.

This year, tonnage has dropped up to 10 percent for many carriers. This falloff, combined with higher labor costs, has lowered the 1991 profit outlook for the entire LTL industry.

April rate increases of five to six percent following the Teamster contract ratification have helped boost sagging margins, but further rate relief seems unlikely. In May, several carriers announced intentions to take an additional increase in July of about 3.5 percent, but given the continued softness in the economy, this increase was abandoned. "I doubt any LTL carrier will be able to take another rate increase in 1991," says Robertson. "Carriers are having a hard enough time holding the line on current rates."

Robertson, however, is optimistic about improvement for the remainder of 1991. "Operating margins will rebound strongly as the economy begins to recover because of the unexpected price discipline we have seen," he says.

Looking beyond the immediate finances of LTL carriers, Robertson points to three reasons why LTL carriers should fare better in the 1990s than they did in the '80s.

Consolidation within the industry has dissipated: After the bankruptcies of P.I.E. and Transcon, the remainder of the long-haul LTL carriers are evenly matched in terms of profitability. Mergers or acquisitions among the major carriers "would be too expensive to be worthwhile," says Robertson. At the regional LTL

continued

NORTHEAST/MIDDLE ATLANTIC LTL CARRIERS – 1990 vs. 1989
(Millions of Dollars)

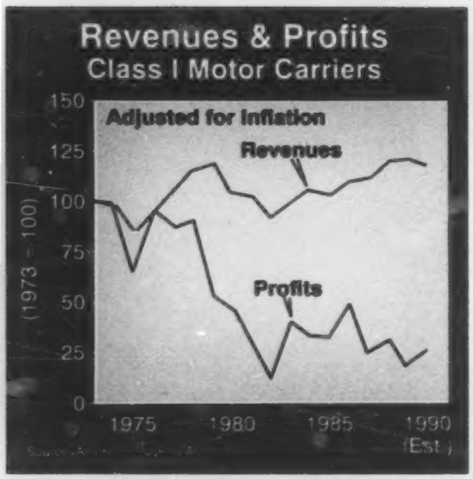
Rank	Carrier	1990 Revenue	1989 Revenue	% Change	1990 NI	1989 NI	% Change	1990 OR	1989 OR	Change
1.	St. Johnsbury	331.88	313.55	+5.85	1.98	1.87	+5.75	95.10	91.10	-4.00
2.	TNT Red Star	158.87	146.03	+8.79	2.12	4.71	-122.45	97.40	95.00	-2.40
3.	APA Transport	142.11	133.40	+6.53	8.60	7.60	+11.67	92.30	92.80	+0.50
4.	New Penn	125.03	113.27	+10.37	19.21	17.84	+7.15	79.30	80.00	0.70
5.	Estes	96.86	90.20	+7.38	9.78	8.98	+8.14	84.10	84.80	+0.70
6.	Wilson	59.63	57.66	+3.43	2.76	2.66	+3.69	92.80	92.80	–
7.	New England Motor	58.86	49.76	+18.29	1.80	1.48	+17.79	96.90	96.38	-0.52
8.	CBL Trucking	30.00	26.66	+12.53	0.23	0.23	–	98.13	97.32	-0.81

Data not available for certain carriers including Ward Trucking.
Key: NI = net income; OR = operating ratio
Source: ICC

MIDWEST LTL CARRIERS – 1990 vs. 1989
(Millions of Dollars)

Rank	Carrier	1990 Revenue	1989 Revenue	% Change	1990 NI	1989 NI	% Change	1990 OR	1989 OR	Change
1.	TNT Holland	250.87	206.24	+21.64	16.11	12.11	+33.04	88.80	89.60	+0.80
2.	Arkansas Freightways	142.95	97.59	+46.48	7.00	4.06	+72.30	90.40	92.00	+1.60
3.	Advance Transportation	114.32	102.99	+11.00	0.91	0.40	+130.30	97.00	97.40	+0.40
4.	Hyman	103.64	91.14	+13.71	0.46	0.91	-49.01	99.00	98.00	-1.00
5.	Fore Way	67.48	60.80	+10.99	0.01	0.56	-98.75	99.70	98.00	-1.70
6.	Crouse Cartage	61.17	55.13	+10.95	1.65	1.44	+15.93	95.30	95.30	–
7.	Jones Transfer	59.98	65.75	-8.77	-1.46	-0.78	+86.92	99.80	97.10	-2.70
8.	Be-Mac	52.92	51.21	+3.53	-0.92	-0.81	+13.72	98.90	99.10	+0.20

Key: NI = net income; OR = operating ratio
Source: ICC



LTL carriers now focus more on margins than they do on market share or revenue.

level, Robertson sees considerably more chance of consolidation through mergers or bankruptcies, but he would be "very surprised if the industry self-destructs in the 1990s as it did in the 1980s through massive price cutting."

Resurgence of U.S. manufacturing: Throughout the 1980s, the U.S. shifted from a manufacturing economy to a distribution economy increasingly dependent on imported goods.

"Many imported consumer goods move inland via rail or air and therefore bypass the LTL carriers," Robertson says. Imports in the U.S. doubled from 8 to 16 percent of GNP in the 1980s. Part of this increase was due to a U.S. "Cold War" policy that promoted easy access to our markets from European and Asian nations our government was wooing. These imports came at the expense of domestic producers, who now are more aggressive and have a stronger political voice. "With the collapse of the East bloc, our industrial and trade policies are likely to change," says Robertson. "America will have to manufacture more relative to what we consume in the 1990s to avoid a massive decline in living standards. Such a trend will help LTL truckers because manufacturing is transportation intensive."

LTL carriers regaining market share from TL carriers: During the 1980s, aggressive TL carriers added capacity and cut rates—even in the face of rising costs—to gain both TL and large LTL traffic. To survive in the 1990s, TL carriers cannot afford to be as aggressive, but will have to focus on improving margins. LTL carriers should be more competitive, especially if the availability of TL drivers remains tight, taxes and user fees continue to rise, and higher LTL wages lead to much lower employee turnover. And because TL carriers spend two to three times as much on fuel as a percent of revenue as LTL carriers, they will be much more vulnerable to fuel price surges.

Not all LTL carriers will find themselves in a comfortable niche, notes

continued

SOUTHEAST & SOUTH CENTRAL LTL – 1990 vs. 1989
(Millions of Dollars)

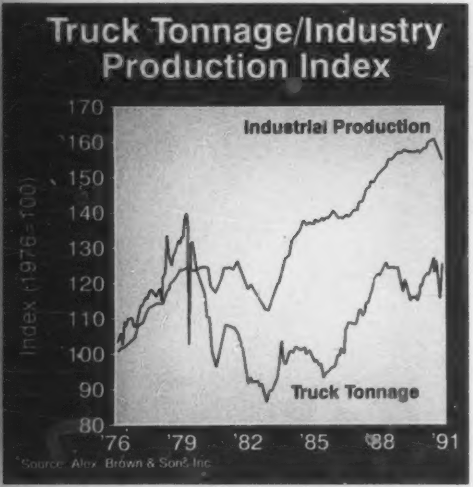
Rank	Carrier	1990 Revenue	1989 Revenue	% Change	1990 NI	1989 NI	% Change	1990 OR	1989 OR	Change
1.	Central Freight	226.42	213.26	+6.17	5.38	7.36	-26.85	96.50	94.60	-1.90
2.	AAA Cooper	157.86	136.38	+15.76	9.90	5.14	+92.66	89.40	90.10	+0.70
3.	Southeastern	154.42	129.39	+19.35	14.41	10.37	+38.93	90.60	91.80	+1.20
4.	Averitt Express	142.66	113.10	+26.13	3.64	3.86	-5.83	93.90	92.90	-1.00
5.	Merchants Fast Freight	102.93	99.78	+3.15	0.53	0.90	-40.91	98.90	98.60	-0.30
6.	Saia	102.55	85.62	+19.78	5.41	3.65	+48.17	86.10	86.20	+0.10
7.	Transus	80.37	70.54	+13.94	1.17	8.95	-86.93	98.70	99.50	+0.80
8.	Spartan Express	78.60	69.58	+12.95	-3.84	-6.26	+38.69	104.30	110.90	+6.60
9.	Standard Trucking	58.47	47.21	+23.86	0.41	0.13	+217.97	97.50	98.10	+0.60
10.	Smalley	51.97	49.74	+4.49	-1.12	-1.17	+4.53	100.59	101.69	+1.10
11.	Armellini Express	51.06	47.73	+6.98	0.75	1.24	-39.94	96.70	95.50	-1.20

Key: NI = net income; OR = operating ratio
Source: ICC

WESTERN & ROCKY MOUNTAIN LTL CARRIERS – 1990 vs. 1989
(Millions of Dollars)

Rank	Carrier	1990 Revenue	1989 Revenue	% Change	1990 NI	1989 NI	% Change	1990 OR	1989 OR	Change
1.	Viking Freight	223.95	199.81	+12.08	9.08	10.96	-17.22	90.80	88.90	-1.90
2.	G.I. Trucking	103.82	84.26	+23.21	1.57	-0.25	NM	94.70	97.10	+2.40
3.	Willig	81.37	79.21	+2.72	0.20	1.66	-87.76	95.60	93.80	-1.80
4.	TNT Bestway	60.40	54.25	+11.34	1.77	2.85	-38.02	94.20	89.98	-4.22
5.	Lynden	46.69	48.37	-3.47	2.30	2.79	-17.44	92.30	91.10	-1.20

No data available for DISalvo Trucking.
Key: NI = net income; OR = operating ratio; NM = not meaningful
Source: ICC



Truck Tonnage/Industry Production Index

Source: Alex. Brown & Sons Inc.

As the economy recovers in 1991, LTL tonnage and margins will rebound.

Robertson, who sees regional and interregional LTL carriers with long lengths of haul as highly vulnerable to competition from national LTL carriers, TL carriers and even intermodal carriers.

"Being caught between the long-haul big guys and the short-haul regionals is a very dangerous place to be," says Robertson. He sees many interregional and regional LTL carriers rapidly restructuring themselves to have lengths of haul under 600 miles.

For the rest of the LTL industry, especially the large national carriers, Robertson has seen a gradual strategic shift away from increasing market share to improving operating margins. This change in strategy began in 1988 when the new Teamster contract removed wage differentials. Since 1985, LTL carriers have had a two-tier wage structure whereby they could hire new Teamster workers at 70 percent of the full scale. With labor accounting for two-thirds of LTL costs, the availability of cheap incremental labor encouraged LTL carriers to expand rapidly and to heat up competition in the LTL marketplace. The 1988 contract removed carriers' incentive to add new employees and encouraged them to manage their costs better.

"LTL carriers now have earnings that are highly correlated with growth in the domestic industrial economy," says Robertson. "LTL trucking is now a cyclical industry driven purely by economic activity. For example, in the first quarter the *Business Week* production index dropped three points and operating margins for LTL carriers dropped two points."

In their search for operating efficiency, LTL carriers are increasingly looking for ways to improve their internal operations, says Robertson.

"The action now is in the back office with technologies that will reduce transaction costs, improve billing accuracy, and allow better cost identification," he says. "This is the last productivity frontier." ■

TNT HOLLAND BLOSSOMS BY DOING THE BASICS RIGHT

Back in the late-1970s, the management team at Holland Motor Express formulated a strategic plan that was to serve it well during the turbulence of deregulation. The plan worked so well that in 1983, Holland's operating ratio dipped below 90 for the first time—a feat that would be repeated many times.

This performance attracted the attention of TNT North America, the U.S. arm of the giant Australian transport firm, which was looking for strong regional carriers to anchor its foray into the U.S. TNT acquired Holland in 1984 and left the management team and the strategic plan in place.

TNT
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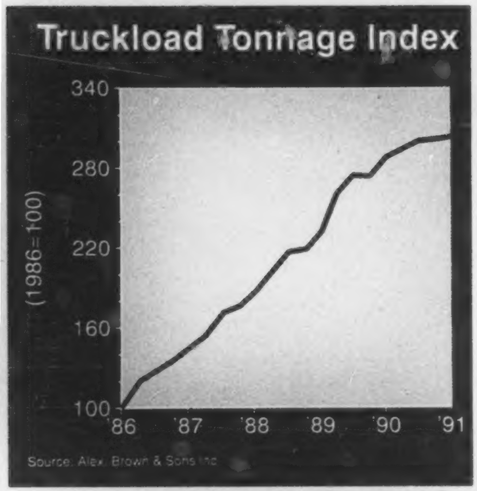
The underpinnings of that plan include controlled expansion and an ongoing push to reduce operating costs. So the Holland, Mich.-based carrier expanded into key markets in the central U.S., using its own people and its own equipment. It also acquired intrastate authority in all the states it services. "We wanted to be the 'total carrier,' whether the shipper wanted to go across town, across the state or across the country," says Michael J. Gorno, who was president of Holland when TNT acquired it and continues to hold the position today.

To control costs, Holland concentrates on the basics. Its safety record keeps Holland's insurance costs among the lowest in the industry. Its claims process is consistently recognized as one of the best in trucking. A $250 million carrier, Holland has no regions or districts; it works hard to keep the organization flat. Overhead is low too. Gorno figures other carriers would need at least 10 more terminals to handle the volume of business Holland does with 39.

TNT Holland installed a new computer system, it uses bar coding to track shipments and it's doing EDI with key customers. Yet the carrier remains committed to investing in things that will give it a service advantage. Gorno cites carriers that are out of business today even though they had sophisticated computer systems. "It's because they didn't do the basics right," he says.



Source: Alex. Brown & Sons Inc

TL tonnage boomed in the 1980s, but growth is flattening in the 1990s.

TL Shakeout To Shake Up Rates

The boom days for TL carriers ended in 1990, but carriers that can hang on see the prospect of higher rates as capacity shrinks in most sectors.

By Thomas A. Foster, Esq., Editorial Director

Last year marked the end of a booming decade for the truckload industry. Revenue increased nicely for the leading TL carriers in 1990, but the increases were modest compared to the 30 or 40 percent gains these carriers enjoyed throughout most of the 1980s. Profits for the TL industry as a whole increased 25 percent in 1990, but the more leveraged carriers began to see their profits fall dramatically. Clearly the rest of 1990s will be a very different decade for the $200 billion TL industry.

According to John Larkin, an analyst with the Baltimore brokerage firm of Alex. Brown & Sons, the days of growing by expanding capacity and a customer base as fast as possible are gone.

The great changes are happening in the high-density, long-haul mar-

continued

SCHNEIDER NATIONAL QUIETLY LEADS THE TL MARKET

Donald J. Schneider is a quiet man who tries to keep a low profile for himself and his company—Schneider National. But with 6,700 tractors and 14,600 trailers, all bright orange and bearing his name, keeping a low profile is difficult. Schneider National is the nation's largest truckload carrier, and has grown an average of 14.5 percent since 1980, when revenues were about $215 million. Revenues in 1990 from its TL, tank, flatbed divisions amount to $796 million, nearly a 20 percent increase over 1989. Total revenue for the company, which also is into information systems, satellite communications and electronic data interchange, was $832 million in 1990.

Don Schneider attributes his company's growth to the fact that "more shippers are looking at their operations as a supply chain and are more concerned with quality and true carrier partnerships than ever before."

Schneider pioneered the use of satellite vehicle tracking several years ago by investing $40 million in Qualcomm's Omnitrac technology. The TL carrier actively markets its satellite tracking capability to shippers under the name StarServe, which Don Schneider says offers shippers many service advantages. "If a shipper needs a truck quickly, StarServe will dispatch a vehicle on the highway immediately."

Don Schneider says the 1990s will be different from the 1980s, which emphasized revenue growth. "We are developing software that will enable us to integrate our services with our customers' operations. If we both can look at the whole sytstem, we can eliminate the bottlenecks."

Schneider also sees deregulation and elimination of unnecessary government bureaucracy as important productivity challenges for the 1990s. "We have to communicate to Congress the dramatic improvements made in the 1980s and the need for similar productivity-enabling legislation for the 1990s," says Schneider.

ket, which according to Larkin is saturated with low-cost truck equipment and double-stack containers.

"No smart TL carriers are adding equipment these days," says Larkin. "Most long-haul carriers are just trying to survive the recession as best they can and position themselves for the next spurt of economic growth."

Larkin says he is surprised by how few carriers have gone out of business in the last year. "With the weak economy, fuel price hikes, and shortages of capital, I would have expected more carriers to call it quits," he says. He does expect the consolidation to continue, mainly because lenders have decided not to renew loans with weaker TL carriers.

"This credit crunch comes at a time when carriers most need cash to finance licensing, permitting, extra maintenance and other expenses," he says.

Larkin points to other financial pressures that could force weaker TL carriers out of business in the months ahead. Insurance companies are doing a better job of screening carriers' risk management and safety programs. The good carriers will pay significantly lower rates than carriers with poor safety records.

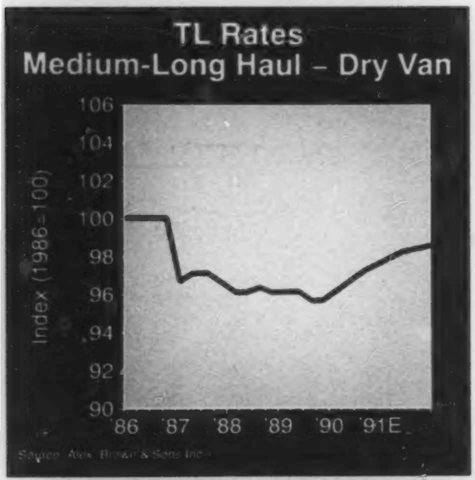
Shippers are also taking their toll on the number of TL carriers. "The

continued

TOP 50 GENERAL COMMODITY TL CARRIERS – 1990 vs. 1989
(Millions of Dollars)

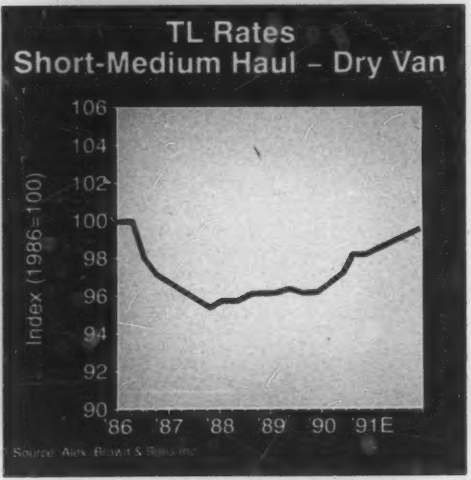
Rank	Carrier	Type	1990 Revenue	1989 Revenue	% Change	1990 NI	1989 NI	% Change	1990 OR	1989 OR	Change
1.	Schneider National	V,B,FB	796.36	665.82	+19.61	NA	NA	NA	NA	NA	–
2.	J.B. Hunt	V,FB	579.83	509.28	+13.85	30.05	30.62	-1.85	90.20	87.90	-2.30
3.	Ryder Distribution	V	314.73	281.50	+11.81	6.09	-4.47	NM	96.40	101.60	+5.20
4.	Werner Enterprises	V	251.58	191.44	+31.41	16.78	16.07	+4.42	89.20	87.40	-1.80
5.	Builders Transport	V,FB	240.76	228.23	+5.49	-10.70	-2.28	-369.30	97.40	98.20	+0.80
6.	Ranger	V	228.45	203.24	+12.40	2.60	5.47	-52.52	96.40	97.30	+0.90
7.	MNX	V	198.92	123.59	+60.96	0.22	-7.35	NM	98.20	106.20	+8.00
8.	Swift	V	156.33	123.71	+26.37	6.66	3.01	+121.26	90.10	91.20	+1.10
9.	Inway	V	154.88	145.45	+6.48	0.25	1.92	-87.21	96.10	96.40	+0.30
10.	National Freight	V	136.47	131.09	+4.10	-0.95	-1.36	+29.67	98.90	95.50	-3.40
11.	Ace Transportation	V	134.06	96.68	+38.67	1.04	2.04	-48.85	96.10	97.40	+1.30
12.	Crete Carriers	V	131.37	109.88	+19.56	7.57	4.49	+68.51	94.60	96.90	+2.30
13.	KLLM	R	125.76	115.75	+8.65	2.77	1.39	+99.28	92.70	94.20	+1.50
14.	M.S. Carriers	V	123.58	96.81	+27.65	6.38	8.32	-23.32	89.40	84.10	-5.30
15.	CRST, Inc.	V,FB	119.35	NA	NA	NA	NA	NA	NA	NA	NA
16.	Tri-State	V	117.35	104.80	+11.97	0.91	0.18	+422.29	95.10	98.50	+3.40
17.	Stoops	V	113.51	104.03	+9.11	0.98	2.64	-62.88	96.00	98.30	+2.30
18.	Anderson	V	113.20	103.41	+9.47	2.33	2.66	-12.37	95.20	94.40	-0.80
19.	Poole	V	110.73	104.52	+5.95	-0.09	-3.83	+97.76	96.70	99.50	+2.80
20.	Munson	V	107.85	99.65	+8.23	-0.68	0.28	NM	95.70	95.50	-0.20
21.	Universal Am-Can	V	105.81	87.82	+20.48	0.43	3.52	-87.91	98.70	94.80	-3.90
22.	Ligon	V,FB	104.86	87.97	+19.19	0.01	0.18	-96.02	97.70	96.80	-0.90
23.	New Prime	V	98.63	78.60	+25.49	3.43	5.33	-35.65	92.60	89.40	-3.20
24.	Dart	V	97.21	90.83	+7.03	1.91	3.35	-42.96	95.10	93.40	-1.70
25.	C.R. England & Son	R,V	97.19	73.88	+31.55	3.73	2.41	+55.11	92.60	93.90	+1.30
26.	Roberts Express	E	92.42	78.39	+17.89	7.08	6.43	+10.09	88.30	87.60	-0.70
27.	Mercer Transportation	V	88.31	75.61	+16.80	3.33	3.45	-3.48	96.00	95.30	-0.70
28.	Freymiller	V,R	86.09	69.15	+24.49	2.05	1.80	+13.88	90.60	90.90	+0.30
29.	Roadrunner	V	82.79	81.06	+2.14	0.96	2.00	-52.30	96.00	94.60	-1.40
30.	Marten	V	81.35	73.31	+10.96	1.79	-1.40	NM	93.40	98.90	+5.50
31.	Mid West Coast	V	79.26	68.00	+16.55	1.54	1.58	-2.78	96.30	95.80	-0.50
32.	National Carriers	R	76.25	73.02	+4.42	1.17	1.12	+4.00	96.00	95.94	-0.06
33.	Jack Gray	V	74.53	77.79	-4.19	3.27	5.83	-44.02	97.00	92.40	-4.60
34.	Malone Freight	V,FB	70.99	63.67	+11.49	0.32	0.65	-51.16	99.50	98.70	-0.80
35.	Jones Motor	FB	64.89	62.15	+4.40	-0.69	0.73	NM	101.60	99.60	-2.00
36.	PST	V,E	64.50	58.64	+10.00	-3.74	-0.31	-1118.89	102.30	95.30	-7.00
37.	McGil	V	64.02	60.80	+5.30	-1.27	0.13	NM	100.73	98.16	-2.57
38.	Willis Shaw	V,R	63.83	57.09	+11.81	2.58	2.96	-12.71	90.60	89.60	-1.00
39.	Heartland	V	62.81	48.30	+30.04	1.22	0.78	+57.42	97.40	97.50	+0.10
40.	Acme Truck Line	FB	61.12	45.27	+35.02	1.83	1.18	+54.95	96.80	97.50	+0.70
41.	Alterman	R	58.62	54.27	+8.00	-1.81	-1.44	-25.21	100.00	99.20	-0.80
42.	Southwestern	V	57.87	56.97	+1.58	0.91	0.96	-5.09	97.60	97.60	–
43.	PAM	V	57.69	70.12	-17.73	5.27	6.84	-23.00	97.30	107.40	+10.10
44.	Pre Fab Transit	V,FB	57.06	56.87	+0.33	1.66	1.20	+37.80	99.00	96.70	-2.30
45.	Deaton	V	54.37	52.37	+3.82	-0.35	-1.26	+72.19	99.30	101.90	+2.60
46.	TLC Lines	V	50.65	51.62	-1.86	0.01	0.76	-98.29	98.10	96.70	-1.40
47.	Commercial Carrier	V	50.30	51.51	-2.36	1.91	3.24	-41.15	89.20	84.80	-4.40
48.	McClendon	V	50.06	45.17	+10.18	3.17	1.03	+207.46	91.00	93.32	+2.32
49.	Eck Miller	V	48.99	57.71	-15.12	1.67	-3.87	NM	96.70	106.60	+9.90
50.	Gemini	V	45.59	90.16	-49.44	-1.28	2.61	NM	NA	97.10	+97.10

Financial figures unavailable for several large carriers including Contract Freighters and Carretta Trucking.
Key: NI=net income; OR=operating ratio; NA=not available; NM=not meaningful; V=dry van; R=reefer or temperature controlled; FB=flatbed; B=bulk; E=expedited/critical shipment
Source: ICC and individual carriers



Source: Alex. Brown & Sons Inc.

Rates will grow in the long-haul market if capacity is taken out of the system.



Source: Alex. Brown & Sons Inc.

The greatest TL rate growth should be in the short-haul market.

core carrier concept focuses shipper attention on well-capitalized carriers, leaving only overflow traffic for the weaker carriers," says Larkin.

Finally, the driver shortage will have its greatest impact on the weaker TL carriers, according to Larkin. "With recent improvements in the compensation packages offered by many of the larger, better capitalized carriers, experienced drivers are drifting away from small carriers toward the larger ones," says Larkin. "This further increases the expenditures necessary by the small carriers to recruit adequate numbers of people and makes it difficult to maintain quality standards."

But all is not doom and gloom for the TL industry, he says.

Larkin sees the possibility of significant rate movement as the economy strengthens. "With the larger TL carriers holding back on adding capacity, prices will remain firm, and as the economy strengthens, it is possible that our country could witness for the first time in many years a capacity shortage in the TL industry," says Larkin. "This could set the stage for some interesting price increases that have been needed for years."

Larkin says some "enlightened shippers" are granting their TL carriers two to four percent rate increases now in exchange for guarantees of equipment and service availability next year when capacity shortages could show up.

Larkin also sees a trend toward diversification among TL carriers into niche operations such as temperature-controlled and flatbed hauling. He points out that some carriers are looking at such non-traditional growth areas as airfreight, leasing and even packaging.

The TL market for short-haul and specialized carriers is growing rapidly, according to Larkin, who says the growth stems primarily from shippers converting from private fleets. "These shippers want high-service, dedicated carriage," says Larkin. "This is an untapped market for sophisticated carriers that can handle complex dispatching and equipment scheduling.

"Only about five to 10 carriers have the systems and management depth that would allow diversification," he says. "But that may not stop others from trying."

Tank Truck Carriers

A quick look at 1990 tank carrier revenues indicates business was fairly good last year. But according to Cliff Harvison, executive director, National Tank Truck Carriers Conference, the numbers don't tell the true story.

"The prime source of revenue growth last year was merger and consolidation, not new traffic," he says ruefully. "The tank industry has had several tough years, and the future does not look much better."

Harvison says the most significant event in 1990 was the implementation of Department of Transporta-

continued

TOP 12 TANK TRUCK CARRIERS – 1990 vs. 1989 (Millions of Dollars)

Rank	Carrier	1990 Revenue	1989 Revenue	% Change	1990 NI	1989 NI	% Change	1990 OR	1989 OR	Change
1.	Bulk Materials	261.60	241.00	+8.55	NA	NA	NA	NA	NA	NA
2.	Matlack	216.88	214.49	+1.11	0.67	-0.19	NM	96.60	98.94	+2.34
3.	Chemical Leaman	210.87	207.36	+1.69	1.10	-0.58	NM	97.70	97.34	-0.36
4.	Montgomery Tank Lines	126.56	105.52	+19.94	2.08	3.12	-33.27	91.10	91.10	–
5.	Trimac Transport	98.01	80.21	+22.19	NA	NA	NA	95.40	95.20	-0.20
6.	Groendyke Transport	84.46	78.15	+8.07	2.10	1.47	+43.52	95.80	96.40	+0.60
7.	DSI Transports	76.49	72.33	+5.75	3.81	2.04	+86.78	91.60	91.50	-0.10
8.	Miller Transporters	75.93	70.30	+8.01	-0.22	-1.84	+87.88	98.20	101.50	+3.30
9.	Central Transport (NC)	57.53	51.09	+12.61	NA	1.08	NA	95.80	93.65	-2.15
10.	Jack Kelly	57.38	54.27	+5.73	-0.20	-0.05	NM	99.30	100.30	+1.00
11.	Schwerman Trucking	52.18	49.45	+5.52	NA	0.52	NA	97.60	96.86	-0.74
12.	McKenzie Tank Lines	48.57	51.86	-6.34	NA	2.86	NA	99.50	94.10	-5.40

No data available for Koch Service.
Key: NI=net income; OR=operating ratio; NM=not meaningful; NA=not available
Source: ICC and carrier supplied information

TL GROWTH OPPORTUNITIES ($ in billions)

Segment	Market Size
DISTRIBUTION-ORIENTED BUSINESS	
Warehouses/Transloading	$10-$12
Local Cartage	$1-$2
Packaging	Huge
Modal Transfer	$1/2-$1
ASSET DRIVEN BUSINESSES	
Segment	**Market Size**
Regional LTL	$5
Airfreight	$10+
Equipment Leasing	$10+
Equipment Manufacturing	$10+
GEOGRAPHIC EXPANSION	
Segment	**Market Size**
Canada	$5-$10
Mexico	$2-$5
Europe	$10-$20
INFORMATION-BASED BUSINESSES	
Segment	**Market Size**
Load Brokerage	$1-$2
Customs Brokerage	$1-$2
Freight Forwarding	$1-$2
EDI for Other Carriers	<$1
Software Development for Other Carriers	<$100 million

Source: Alex. Brown & Sons Inc.

tion regulation HM-183, which rewrote the rule book for maintenance of tanks for hazardous commodities. "We supported this regulation because it was needed to establish safety standards, but it will add about 30 percent to the cost of maintaining tank trailers," says Harvison.

He points out that HM-183 may even have an unintended upside for the tank carrier industry. "The regulation may drive many older tank trailers out of the system because it will become too costly to maintain them," says Harvison. "With less tank trailer capacity available, carriers may finally have an opportunity to raise rates."

Harvison says regulations being developed to implement the Safe Food Transportation Act will also have a tremendous impact on the tank truck industry. "Depending on how restrictive these new regulations are, tank carriers could suddenly be faced with many empty miles for their food-grade equipment," says Harvison. "If utilization falls dramatically, the carriers' operating margins will go down with it."

The fundamental problem in the tank truck industry is the inability of carriers to raise rates as costs increase. "Relatively few large chemical shippers are the customer base for the entire tank truck industry, and they call the shots when it comes to rates."

Tough Market for HHG Carriers

"Last year was not a good profit year for the household goods carrier industry, but at least the traffic was there," says Joe Harrison, president of the Household Goods Carriers' Bureau. "But in 1991, the business just hasn't been there at all. The stagnating real estate market has cut back corporate moves. The Persian Gulf war dried up military household moves from November until April of 1991. For small HHG carriers military moves can be half their business. For the larger carriers it is eight to 12 percent."

The lack of traffic is not the only problem facing the HHG industry, however. Many household goods carriers have become highly leveraged in the last few years. "Even if our industry can increase revenues," Harrison says, "interest costs will keep profits low."

The industry is hopeful an economic resurgence will come in the third quarter to extend the summer season. "We get half our revenue between May and September," says Harrison. "We are hopeful this moving season will go into October."

Harrison does not see significant opportunities for HHG carriers in terms of getting more of the general freight business. "Very few HHG carriers have been successful in taking freight away from traditional general commodity haulers," he says. The

HOUSEHOLD GOODS
(Trucking Revenue

Rank	Carrier	1990 Total Trucking Revenue	1989 Total Trucking Revenue	% of Change	1990 NI	1989 NI	% of Change	1990 Total OR	1989 Total OR	% of Change
1.	North American Van Lines	775.65	792.19	-2.09	-9.05	-5.95	-52.26	102.00	[illegible]	-2.00
2.	United Van Lines	473.50	468.02	+1.17	0.51	1.89	-73.05	99.60	[illegible]	-0.40
3.	Allied Van Lines	398.58	405.97	-1.82	5.21	6.08	-14.43	98.60	[illegible]	-1.10
4.	Mayflower Transit	310.48	320.77	-3.21	1.95	11.14	-82.45	99.00	[illegible]	-1.50
5.	Atlas Van Lines	216.68	216.68	–	2.58	1.55	+66.54	93.10	[illegible]	-0.10
6.	Bekins Van Lines	212.70	210.89	+0.86	3.19	2.96	-7.73	98.00	[illegible]	-0.20
7.	Graebel Van Lines	96.76	84.15	+14.99	1.19	0.64	+85.49	97.60	[illegible]	+1.00
8.	Burnham Services*	92.51	93.33	-0.87	1.83	4.40	-58.48	96.70	[illegible]	-2.20
9.	Global Van Lines	56.87	60.76	-6.40	0.19	0.74	-74.26	98.20	[illegible]	-0.10
10.	Paul Arpin Van Lines	55.47	50.65	+9.52	0.65	1.16	-44.08	99.00	[illegible]	-1.10
11.	Wheaton Van Lines	47.79	47.15	+1.36	0.09	0.30	-70.96	100.30	[illegible]	-0.80
12.	New World Van Lines	40.90	37.42	+9.31	2.10	1.28	+64.63	94.00	[illegible]	+1.00
13.	National Van Lines	32.68	31.75	+2.90	0.21	-0.47	NM	97.90	[illegible]	+2.00
14.	American Red Ball Van Line	24.88	24.70	+0.72	0.17	-0.20	+184.62	98.90	[illegible]	+1.80

*Burnham now earns the majority of its revenue from logistics services not reported to the ICC or on this summ

Key: NI = net income; OR = operating ratio; NM = not meaningful

Source: ICC and carrier reports

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best diversification opportunities for HHG, according to Harrison, are in sectors such as electronics, where the industry already has a strong foothold. "If HHG carriers are to grow, they are going to have to search out additional niches such as office furniture, intrastate hauls and storage," Harrison says.

The first quarter of 1991 was the worst first quarter the HHG industry experienced in eight years, but Harrison sees some signs of hope. "Leading economic indicators rose in March and April, and the housing market is recovering," he says. "Housing starts in April rose by 6.2 percent, building permits rose by 3 percent and the sale of existing homes by 3.4 percent." ■

MARKET SIZE OF TRUCKLOAD SEGMENTS ($ in billions)

SEGMENT	MARKET SIZE
National Dry Van	$10-$15
Regional Dry Van	$15-$20
Temperature Controlled	$3
Flats	$3
Tanks	$3
Specialized	$2

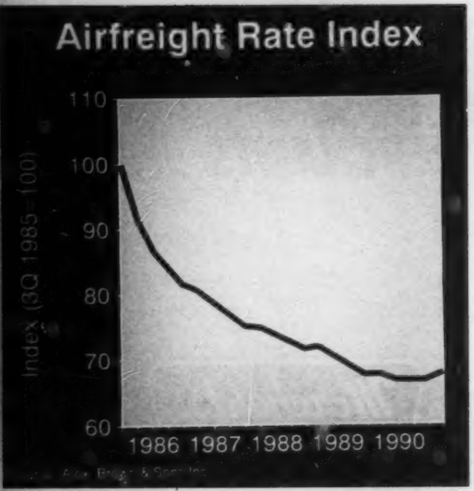
ARRIERS — 1990 vs. 1989
millions of dollars)

1990 HHG Revenue	1989 HHG Revenue	% of Change	1990 HHG OR	1989 HHG OR	% of Change
54[illegible].24	559.46	-1.83	96.60	95.40	-1.20
45[illegible].34	452.75	+1.01	97.70	98.00	+0.30
39[illegible]58	405.97	-1.82	98.60	97.50	-1.10
30[illegible]89	320.45	-4.54	98.20	97.20	-1.00
2[illegible]67	203.10	+3.72	93.30	93.10	-0.20
20[illegible]9	202.15	+0.07	98.10	98.00	-0.10
9[illegible]6	84.15	+14.99	97.60	98.60	+1.00
9[illegible]1	93.33	-0.87	96.70	94.50	-2.20
[illegible]7	60.76	-6.40	98.20	98.10	-0.10
5[illegible]7	50.65	+9.52	99.00	97.90	-1.10
4[illegible]	47.15	+1.36	100.30	99.40	-0.90
4[illegible]	37.42	+9.31	94.00	95.60	+1.60
3[illegible]	31.75	+2.90	97.90	99.90	+2.00
2[illegible]	24.70	+0.72	98.90	100.70	+1.80

TOP HHG FINANCIAL PERFORMANCE 1990 vs. 1989

	1990	1989	% Change
Operating Revenues	$2,584,212	$2,587,913	-0.1
Net Carrier Operating Income	69,001	81,700	-15.5
Net Income/(Loss)	20,613	31,239	-34.0
Revenue Tons Hauled	3,908	4,014	-2.6

Source: ICC



Pricing continued its incremental climb, helped along by a capacity squeeze.

Air Cargo Growth Is Grounded

Recession, high fuel prices and the Gulf war hurt air carriers in 1990, leaving many financially weak. The survivors, though, are poised to grow.

By Richard Malkin, Air Cargo Editor

Preliminary results for the U.S. air cargo industry clearly reflect an economy hit by recession and the high cost of fuel. Last year the U.S. scheduled airline industry legged 12,130,952,000 cargo ton-miles (freight, 10,179,648,000; mail, 1,951,304,000) for a meager 2.5 percent increase over the previous year. International shipments represented 52 percent of this volume, domestic 48 percent.

The U.S. moved into 1991 downside also, with Persian Gulf-related woes added to the continuing recession, though Washington claimed to see brightening economic skies by the summer. The first quarter showed 2.2 percent and 6.4 percent declines in freight and mail ton-miles, respectively. A 5.9 percent drop in domestic cargo overwhelmed a 1.6 percent rise in international freight.

American Airlines continued to impress in its drive to reclaim from the integrated operators a sizable portion of domestic cargo traffic. In 1990, American legged 1.1 billion cargo ton-miles, an increase of 18.4 percent over the previous year. Cargo revenue rose 18.6 percent to $428.9 million.

Underscoring the airline's restored seriousness about cargo was the decision to elevate its cargo business to a separate operating division, with William R. Boesch as president.

United Airlines wound up the year with a 13.7 percent jump in cargo revenue, to $592,872,000. American and United, along with Delta Airlines (1990 revenue, $432.5 million, up 6.1 percent) are regarded as the surest survivors among the combination carriers. American and United have been further strengthened by their acquisition of London routes.

Northwest Airlines, the only U.S. combination air carrier with freighters in its fleet – all eight B747s are in transpacific service – is identified by Wall Street analysts as another survivor, though less shielded from the effects of a prolonged recession.

The rest of the field remains in varying degrees of financial distress. Eastern Airlines shifted from Chapter 11 to Chapter 7 liquidation while Midway Airlines, unable to absorb its big losses, reached for Chapter 11 protection. Two air cargo giants of yesteryear, Pan Am (which is bankrupt) and Trans World Airlines (which threatened bankruptcy if its sale of London routes to American was upset), remain troubled. Continental Airlines, another inhabitant of Chapter 11, is in similar difficulty, but industry observers believe it has a better chance for survival than the former two.

Neither the International Air Transport Association nor the International Civil Aviation Organization had completed its report on 1990 air traffic results in time to accommodate this special report. However, it was learned from reliable sources that the IATA member carriers last year legged slightly more than 22 billion freight ton-kilometers, a decline of .09 percent from 1989.

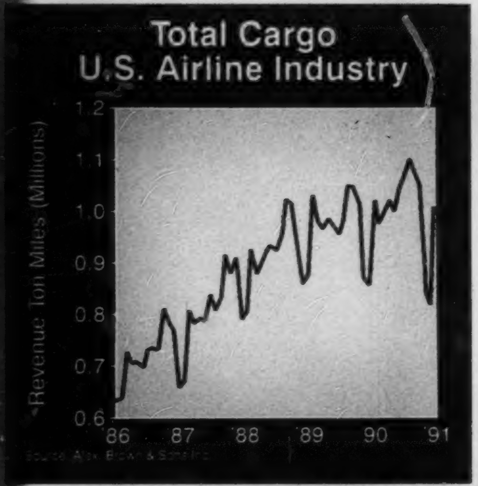
Although IATA has yet to release the relative standings of its 200-plus

continued

U.S. AIR CARRIER TRAFFIC AT LEADING U.S. AIRPORTS – 1990

Cargo Tons Enplaned	
Chicago O'Hare	381,825
Los Angeles	371,650
Memphis	331,584
New York (JFK)	315,618
Anchorage	289,925
San Francisco	245,206
Atlanta	243,248
Dallas/Ft. Worth	212,259
Miami	190,186
Honolulu	153,935
Newark	149,149
Boston	136,626
Seattle	125,515
Minneapolis/St. Paul	97,250
Denver	95,117
Philadelphia	83,761
St. Louis	81,729
Houston	75,533
Detroit	69,005
Indianapolis	67,933

Source: Air Transport Assn.



Revenue ton-miles grew slightly in 1990 but fell off in the first quarter of 1991.

member airlines, it is known that the traditional leaders among the foreign flag carriers—Lufthansa, JAL, Air France, KLM, British Airways, Korean, Swissair, Alitalia, etc.—are well up in the list, along with Federal Express, Northwest and United.

Pricing of international air cargo continued its incremental climb, helped along by a capacity squeeze. But cargo officials claim that rates have yet to reach a fully compensatory level, and in a negotiated deal between carrier and volume shipper/forwarder, no one knows how much of an increase may be ignored.

Integrators Have Their Day

One basic fact of the 1990s is that America's domestic air cargo transportation system is overwhelmingly served by freighters—a dramatic turnabout from a decade earlier when the passenger belly was unthreatened king. This is the direct result of the mushrooming of the integrator, led by Fed Ex (which has acquired Flying Tiger), United Parcel Service and Airborne Freight Corp.

Consider that Fed Ex operates a freighter fleet of 414 units, 54 of which are leased; UPS owns 162 cargo planes, and charters an additional 251; and Airborne's fleet, with new freighters scheduled for 1991 delivery, will reach 70.

Fed Ex, which in fiscal 1990 earned $115.7 million on a little over $7 billion revenues, remains tops in the domestic market but has run into trouble in the international sector. In its latest fiscal year, it reported an operating loss of $196 million on $2.2 billion in international revenues. The company does not expect a turnaround in the international market before fiscal 1993.

As a result, Fed Ex has downsized its services in the soft Pacific market, though it is reportedly holding to its goal of direct service to 196 cities worldwide by the end of this sum-

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FREIGHT AND EXPRESS YIELD
(Revenue per ton mile ¢)

	1980*	1989	1990
Domestic	48.6	95.0	64.0
International	36.5	41.1	39.3
Total	43.5	67.2	51.4

*Does not include Federal Express
Source: Air Transport Assn.

mer. Fed Ex's faith in its international future is further underscored by its participation in tests of U.S. Custom's Automated Commercial System, whereby airfreight import data is transmitted to Customs. The success of these tests has led to Fed Ex's expanded use of the system as it becomes available at a growing number of gateways.

In the Memphis-based carrier's dominant interstate business, it has followed up its two-day service for shipments weighing up to 1,500 pounds with a new service specifically designed to attract single pieces in the 150- to 500-lb. range. Next-day delivery is by noon or 4 p.m., depending on the destination.

UPS registered a 10 percent increase in revenues, to $13.6 billion, in 1990. Its volume of parcels and documents advanced 3 percent to 2.85 billion pieces; however, the airborne portion (189 million pieces) represents a 14 percent jump from the year before.

Last fall, UPS moved into closer competition with its principal rival, Fed Ex, when it introduced guaranteed 10:30 a.m. delivery of shipments in its Next-Day Air service. Over 70 percent of the nation was covered by the money-back guarantee under this time-specific service. The same guarantee was extended to an additional 15 percent with a "before noon" deadline; and to the remainder, an "end of the business day" promise. There is little question that UPS's 26 percent slice of a $9 billion-plus U.S. air express market is overshadowed by Fed Ex's 48 percent share, but it is apparently on a purposeful catch-up course. It is concentrating on service refinements and pricing incentives.

Operating in the domestic market as Airborne Express, Airborne Freight last year passed the $1 billion mark in total revenues ($1.182 bil-

continued

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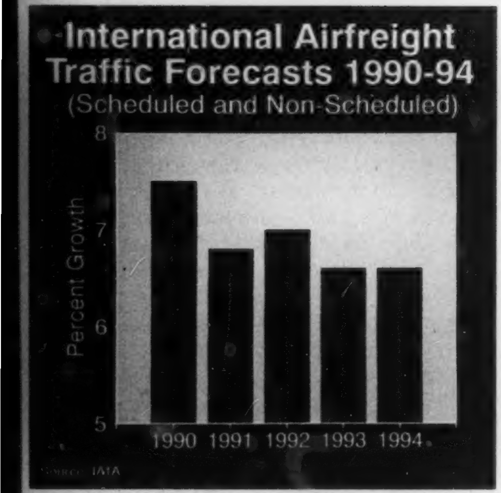

International Airfreight Traffic Forecasts 1990-94
(Scheduled and Non-Scheduled)

Source: IATA

Airfreight is projected to grow faster internationally than domestically.

lion) for the first time. Eighty-three percent of those revenues were derived from domestic air express activities which showed a remarkable 30.6 percent gain over 1989; the remainder was drawn from international air forwarding, which grew a marginal 1 percent. Airborne's rate of growth, however, exceeds that of Fed Ex and UPS.

Emery Worldwide has been wracked by grievous losses ($97.4 million in 1989, followed by $128 million in 1990). Place these losses at the door of competitive pricing, higher fuel costs and the recession. In an attempt to swim out of the sea of red ink, the struggling integrator has redeployed its freighters, reduced the work force and reportedly shifted its attention to heavier shipments. Emery's bottom line has been helped by expanded services for the U.S. Postal System and participation in the Civil Reserve Air Fleet in support of Desert Shield and Desert Storm.

The Air Courier Conference of America (ACCA) says that many of its member companies have successfully coped with the recession by diversifying beyond documents and small parcels into the freight field. Others have turned to warehousing, inventory distribution, trucking and even consulting.

ACCA also won an important case before the U.S. Supreme Court when a unanimous decision rejected arguments by two postal workers' unions that private-sector competition with international mail was in conflict with U.S. Postal Service regulations.

In fact, remail (a misnomer for courier-sorted mail destined for international carriage and mailing from appropriate post offices abroad) has shown impressive growth because it offers corporate mail users speedier service at lower rates.

The European airlines have also been progressive in developing international small-package express services. British Airways and Air France have given their transatlantic products an extra flair with use of the supersonic Concorde.

continued

AT AEI, SMART PRICING = SNAPPY PROFITS

Guenter Rohrmann, president and CEO of Air Express International, has some very specific ideas about what makes a successful freight forwarder. Foremost among them is turning a profit.

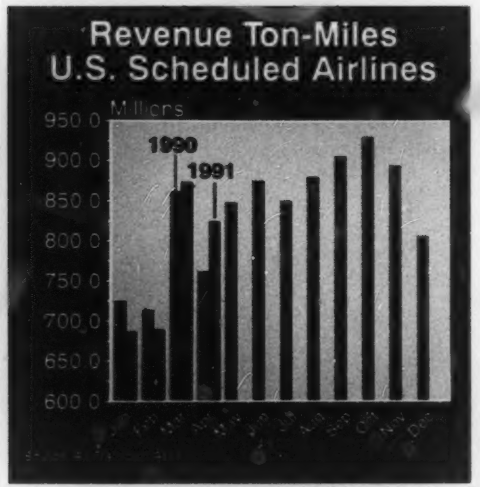
"When it comes to rates," he says, "we realize that we are dealing with some crazy competitors out there. Some have no idea what they are doing." He's particularly critical of other forwarders who, during the Persian Gulf war, lowered their rates even though capacity was at a minimum and rates were soaring.

"They did it just to increase market share," says Rohrmann. "At AEI we are looking for profitable revenues, not just market share. Rohrmann believes that stable pricing is vital to a forwarder's success. I firmly believe that shippers want acceptable and stable rates. You can't have your pricing going up and down like a yo-yo."

So far, the plan seeems to be working. AEI is emerging as one of the strongest and most profitable airfreight forwarders in the business. First quarter earnings in 1991 were up 47 percent over the previous year, annual sales have topped $568 million and operations are running more smoothly now that the company has completely integrated Pandair Freight Inc., which it acquired in 1987.

AEI's strategy for success is relatively straightforward. The company is determined to maintain stable prices, backed with useful, value-added services. It has invested more than $5 million in information systems, which includes direct on-line linkage with British Airways, Federal Express, United Airlines, American Airlines, and soon, Lufthansa. Its custom-designed software enables customers to track individual shipments through their own PCs.

Still, profit remains the motivating force, And one of the critical precepts of AEI's management philosophy is to only move freight at a profit. "If you just go after revenue, or market share," says Rohrmann, "you will end up losing money. We may once in a while take a loss on a lane segment, but overall, we won't continue to move freight at a loss."



The Gulf war and the recession combined to give the airlines a rough start in 1991.

Overall, growth in the small package business continues to outstrip that for freight. Part of this may be explained by the fact that the "hard freight" base was established at least 30 years before the air couriers even became an industry. According to a Colography Group study, documents grew 28 percent in a single year, despite the inroads made by fax, and parcels climbed 42 percent. Forecasts uniformly predict that service-sensitive freight, ranging from documents and small parcels to time-oriented shipments, may account for more than two-fifths of the U.S. domestic ton-miles by the year 2000.

Airfreight 2000

The process of air cargo industry change presents both challenge and promise.

Challenge resides in the readiness and astuteness with which all of the industry's elements react to more sophisticated customer demand, the stepped-up tempo of doing business, the growing influence of logistical thinking and the lengthening reach of globalizing industry.

As for promise, consider Boeing's highly regarded air cargo forecast, issued mid-1990 (before the Persian Gulf crisis). Boeing sees world air cargo (scheduled and charter freight, all types of express, and mail) averaging annual growth of 6.5 percent to the year 2000. In the first half of the 1990s, the development of new express markets is expected to heighten the pace of freight expansion, with average 7.5 percent growth. The U.S. carriers' share of the world air cargo market will decline two percentage points to 33 percent, with non-U.S. airlines accounting for the balance.

International markets will expand at a faster clip. By the turn of the century they will represent 79 percent of global activity. Transpacific freight will increase its world lead with 22 percent of the total; and the once

continued

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dominant North Atlantic, now second to the Pacific, will yield to Europe-Orient/Australia (19 percent). The North Atlantic is forecast to have an 18 percent share.

Boeing's analysts have come up with a baseline 14.49 billion ton-miles in the U.S. domestic market by mid-decade, and 18.74 billion ton-miles in 2000. This represents average annual growth of 6.1 percent in the first half of the decade, and 5.3 percent thereafter.

Is the freighter aircraft staging a comeback in the industry? Boeing's statistics say yes. In the past 20 years, the number of all-cargo aircraft of all sizes increased roughly eightfold to a total of 712. By 2000, this figure will reach 1,260, with more than one-third of the freighters produced providing over 50 metric tons capacity.

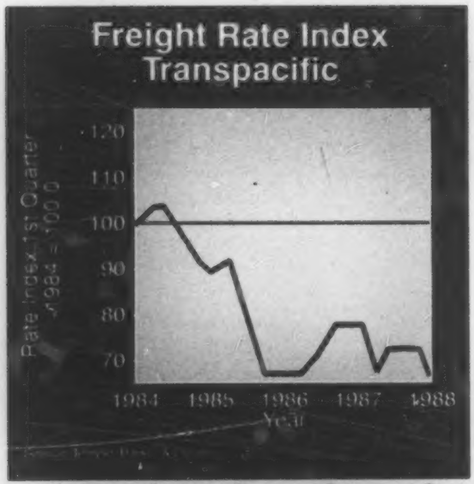
However, in the 1990s their share of world air cargo capacity will increase only one percentage point, to 41 percent. This is partly explained by the fact that, for statistical purposes, combi capacity is combined with bellyload capacity.

The airlines of the U.S. continue to be the world's leading national group in terms of scheduled freight ton-miles. Rounding out the Big Five are Japan, Germany, France and the United Kingdom. ■

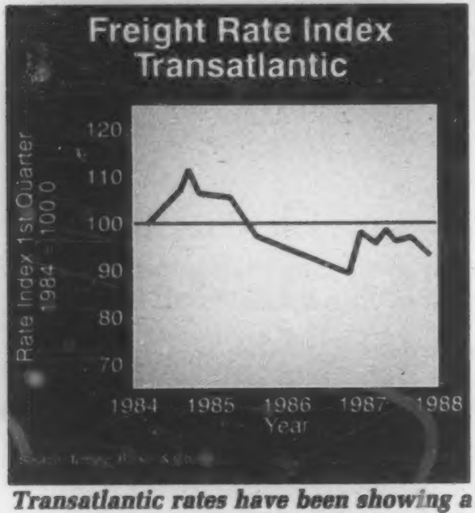
AIR CARRIERS RANKED BY 1990 CARGO REVENUE
(000 Omitted)

Rank	Carrier	Cargo Revenue	Total Revenue	Cargo As % of Total Revenue	Revenue Ton Miles
1.	Federal Express	2,918,132	7,612,986	38.33	4,471,766
2.	United Parcel Service	887,656	891,090	99.61	1,641,821
3.	Northwest	691,346	7,257,113	9.53	1,874,490
4.	United Airlines	608,826	10,956,059	5.56	1,418,643
5.	American	445,820	11,008,677	4.05	1,102,185
6.	Delta Airlines	443,3[illegible]9	8,746,083	5.07	829,182
7.	Pan Am	267,818	3,930,722	6.81	868,640
8.	Continental	256,687	5,202,234	4.93	668,250
9.	TWA	230,539	4,606,082	5.01	659,928
10.	Evergreen	173,326	217,608	79.65	211,837
11.	U.S. Air	162,945	6,084,704	2.68	232,457
12.	Southern Air Transport	90,865	152,503	59.58	271,700
13.	Rosenbaum	78,344	81,666	95.93	690,525
14.	Connie Kalitta	74,661	75,360	99.07	136,676
15.	Alaska	71,973	1,077,065	6.68	73,290
16.	Eastern Airlines	66,856	2,181,796	3.06	142,304
17.	Zantop	63,756	75,139	84.85	70,394
18.	Arrow System	59,341	70,743	83.88	175,334
19.	World	54,001	242,386	22.28	152,953
20.	Challenge Air	51,448	54,088	95.12	121,085
21.	Markair	51,190	128,303	39.90	31,550
22.	America West	44,099	1,321,642	3.34	103,638
23.	Northern Air Cargo	37,247	37,725	98.73	20,150
24.	Florida West	27,301	34,934	78.15	138,906
25.	Amerijet System	27,035	27,500	98.31	42,975
26.	Aloha	23,397	188,852	12.39	9,694
27.	Southwest	22,741	1,186,831	1.92	20,692
28.	Midway	17,034	614,809	2.77	15,407
29.	Reeve	15,818	29,604	53.43	7,436
30.	Hawaiian	15,337	340,024	4.51	20,736
31.	Trans Continental	13,388	32,243	41.52	30,302
32.	Express One	11,729	32,378	36.23	16,940
33.	Midwest Express	4,203	125,825	3.34	6,702
34.	Trump Shuttle	3,310	172,013	1.92	50
35.	Air Wisconsin	2,659	196,649	1.35	1,004
36.	Westair	1,644	209,764	0.78	4
37.	Aspen Air	322	33,251	0.97	82
38.	MGM	321	34,652	0.93	1,841
39.	Executive	245	23,707	1.03	10
40.	Tower Air	102	172,264	0.06	6

Source: I.P. Sharpe/Reuters



Independent actions on imports from the Far East keep rates depressed.



Transatlantic rates have been showing a decline since peaking late in 1984.

Ocean Shipping Gets Rational

Many shippers believe rationalization is forcing carriers to offer generic service. Differentiation is one way carriers are breaking out of the mold.

By E.J. Muller, Senior Editor

In last year's maritime report (*Battle for market share continues*, July 1990, p. 84) we noted two key trends in ocean shipping: first, carriers were diligently trying to promote "differentiation," as a way to either maintain or increase their share of a fairly flat market. Secondly, shipping lines were increasingly using ship-sharing as a way to offset the high asset costs inherent in what's now an almost completely intermodalized business.

For some shippers, these trends seem to be at crossed purposes. "How can a carrier say he's different from a competitor if they're using the same ship, on the same schedule, calling the same port?" many wonder. Carriers respond to such concerns by asserting that "differentiation" today is realized in such things as terminal operations and information systems—not in the quality of ships.

There are those shippers, however, who see carrier's asset rationalization as anti-competitive; a perhaps dangerous step toward generic service. "If shippers are concerned about rationalization, they have no one to blame but themselves," says Hugh Randall, a vice president at Temple, Barker & Sloane and former president of CSX/Sea-Land Logistics. Randall says that fierce pricing competition in the major trade lanes finally convinced privately-held ship operators that "they couldn't earn back the cost of capital."

Is Intermodal Next?

Just a few years ago intermodalism was a key to differentiation in ocean carrier marketing. "Today," says Randall, "it would be hard to argue that offering a stack train service is a point of differentiation."

Yet the growth of stack train intermodalism, pioneered by American President Companies almost a decade ago, has reaped little profit for carriers. "I don't know if any company has ever made money on the inland portion of their business," says Randall. At best, companies with intermodal operations are now covering their costs. "It's something they have to do now to be competitive internationally," Randall says, "but what was once an innovation is now a commodity." And if it's a commodity that isn't earning a significant return—look for rationalization.

We predict that some stack train operators will soon give up the ghost on dedicated stack train service, and opt instead for more frequent "generic" service—mirroring the evolution of ocean-side operations.

Price Still Steers the Ship

As ship operators seek new ways to cut costs and improve return, shippers continue their pursuit of "greater pricing flexibility." This is one trend that has held steady, or perhaps even increased due to the pressures exerted by the recession. The past year saw shippers and carriers still debating the relative merits of the conference pricing system and shippers were again irked by conference carriers' attempts to use antitrust immunity to forge general

continued

OCEAN CARRIERS RANKED BY EXPORT VOLUME
TOP CONTAINER CARRIERS PER TRADE ROUTE – 1990 vs. 1989

Carrier	1990 TEUs	1990 Mkt Sh	1989 TEUs	1989 Mkt Sh	% Volume Change
U.S. EAST COAST TO NORTHERN EUROPE					
Hapag Lloyd	63,538	11.0%	51,208	9.9%	+24.08%
OOCL	63,540	11.0%	47,111	9.0%	+34.87%
Maersk	57,056	9.9%	45,945	8.8%	+24.18%
Evergreen Line	56,742	9.8%	51,709	9.9%	+9.73%
Sea-Land	54,492	9.5%	57,396	11.0%	-5.06%
Trade Route Total	576,136		522,896		+10.18%
U.S. GULF COAST TO NORTHERN EUROPE					
Sea-Land	31,265	18.4%	30,156	19.7%	+3.68%
Hapag Lloyd	21,365	12.6%	16,534	10.8%	+29.22%
P&O Container Line	19,216	11.3%	18,126	11.8%	+6.01%
Euro-Gulf Liner Service	18,385	10.8%	12,661	8.3%	+45.21%
Lykes Lines	17,045	10.0%	17,[illegible]	11.3%	-1.49%
Trade Route Total	170,026		153,[illegible]		+10.85%
U.S. PACIFIC COAST TO NORTHERN EUROPE					
Maersk	24,466	23.4%	20,198	21.3%	+21.13%
Hapag Lloyd	23,611	22.6%	19,780	20.8%	+19.37%
Senator Linie	11,118	10.6%	6,991	7.4%	+59.03%
CGM French Line	10,879	10.4%	6,184	6.5%	+75.92%
Star Shipping	8,753	8.4%	5,826	6.1%	+50.24%
Trade Route Total	104,423		94,957		+9.97%

Carrier	1990 TEUs	1990 Mkt Sh	1989 TEUs	1989 Mkt Sh	% Volume Change
U.S. EAST COAST TO MEDITERRANEAN					
Zim Container	27,762	15.6%	25,945	15.9%	+7.00%
Sea-Land	25,362	14.3%	23,937	14.7%	+5.95%
Evergreen Line	17,492	9.8%	17,617	10.8%	-0.71%
Italian Line	14,894	8.4%	10,617	6.5%	+40.28%
Farrell Line	14,041	11.1%	12,637	7.7%	–
Trade Route Total	177,840		163,101		+9.04%
U.S. GULF COAST TO MEDITERRANEAN					
Lykes Lines	7,448	22.3%	6,270	22.3%	+18.79%
Spanish Line	5,011	15.0%	4,725	16.8%	+6.05%
Mexican Line	4,869	14.6%	3,074	10.9%	+58.39%
Maersk	3,668	11.0%	3,542	12.6%	+3.56%
Zim Container	3,588	10.7%	2,572	9.1%	+39.50%
Trade Route Total	33,419		28,150		+18.72%
U.S. PACIFIC COAST TO MEDITERRANEAN					
Zim Container	10,648	45.7%	6,737	45.5%	+58.05%
D'Amico	7,734	33.2%	4,191	28.3%	+84.54%
Italian Line	3,299	14.2%	2,678	18.1%	+23.19%
United Yugoslav	1,596	6.9%	1,211	8.2%	+31.79%
Trade Route Total	23,277		14,817		+57.10%

Carrier	1990 TEUs	1990 Mkt Sh	1989 TEUs	1989 Mkt Sh	% Volume Change
U.S. EAST COAST TO FAR EAST					
Evergreen Line	87,134	17.2%	103,785	21.6%	-16.04%
Maersk	83,346	16.4%	83,556	17.4%	-0.25%
Hanjin Shipping	78,445	15.5%	62,536	13.0%	+25.44%
Yangming Marine	59,463	11.7%	53,234	11.1%	+11.70%
OOCL	36,024	7.1%	32,375	6.7%	+11.27%
Trade Route Total	506,914		480,871		+5.42%
U.S. PACIFIC COAST TO FAR EAST					
American President	228,874	13.5%	226,702	13.9%	+0.96%
Evergreen Line	166,201	9.8%	158,178	9.7%	+5.07%
NYK Line	156,247	9.2%	138,005	8.5%	+13.22%
K Line	143,881	8.5%	131,952	8.1%	+9.04%
Sea-Land	132,760	7.8%	150,494	9.2%	-11.78%
Trade Route Total	1,693,582		1,627,550		+4.06%

Source: Journal of Commerce/Piers

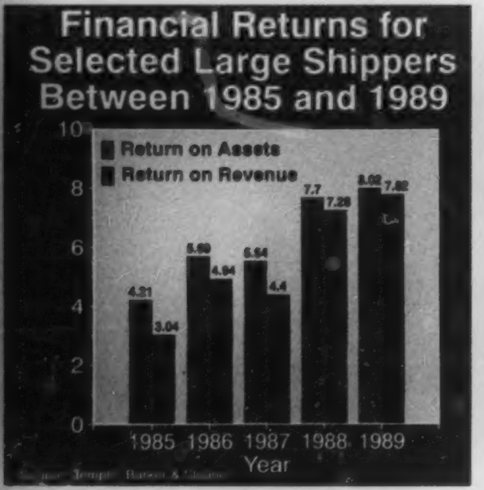
OCEAN CARRIERS RANKED BY IMPORT VOLUME
TOP CONTAINER CARRIERS PER TRADE ROUTE – 1990 vs. 1989

Carrier	1990 TEUs	1990 Mkt Sh	1989 TEUs	1989 Mkt Sh	% Volume Change
NORTHERN EUROPE TO U.S. EAST COAST					
Sea-Land	87,865	12.6%	91,929	12.8%	-4.42%
Hapag Lloyd	72,841	10.4%	73,122	10.2%	-0.38%
Atlantic Container	71,769	10.3%	73,994	10.3%	-3.01%
Maersk	71,080	10.2%	73,072	10.2%	-2.73%
OOCL	67,401	9.7%	58,376	8.1%	+15.46%
Trade Route Total	697,163		719,246		-3.07%
NORTHERN EUROPE TO U.S. GULF COAST					
Sea-Land	27,924	24.1%	24,686	21.9%	+13.12%
Lykes Lines	16,808	14.5%	15,316	13.6%	+9.74%
Hapag-Lloyd	14,391	12.4%	12,101	10.7%	+18.92%
P&O Container Line	8,836	7.6%	9,082	8.0%	-2.71%
Atlantic Cargo	8,484	7.3%	7,008	6.2%	+21.06%
Trade Route Total	170,026		153,385		+10.85%
NORTHERN EUROPE TO U.S. PACIFIC COAST					
Maersk	25,355	23.8%	21,652	19.2%	+17.10%
Hapag Lloyd	19,923	18.7%	17,792	15.8%	+11.98%
Evergreen Line	15,720	14.8%	11,152	9.9%	+40.96%
CGM French Line	10,322	9.7%	6,447	5.7%	+60.11%
Star Shipping	9,453	8.9%	15,600	13.9%	-39.40%
Trade Route Total	106,560		112,481		-5.26%

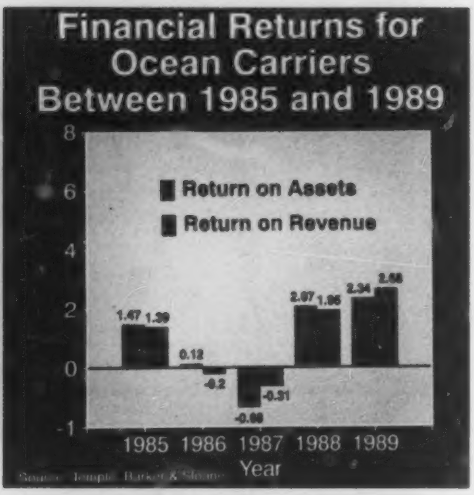
Carrier	1990 TEUs	1990 Mkt Sh	1989 TEUs	1989 Mkt Sh	% Volume Change
MEDITERRANEAN TO U.S. EAST COAST					
Sea-Land	35,609	13.6%	38,041	13.9%	-6.39%
Evergreen Line	24,486	9.4%	27,076	9.9%	-9.57%
Farrell Line	23,818	9.1%	25,350	9.3%	-6.04%
Zim Container	23,557	9.0%	23,898	8.8%	-1.43%
Jugolinia	23,540	9.0%	23,489	8.6%	–
Trade Route Total	261,780		273,094		-4.14%
MEDITERRANEAN TO U.S. GULF COAST					
Lykes Lines	6,060	26.8%	5,222	20.8%	+16.05%
Maersk	3,854	17.1%	5,481	21.9%	-29.68%
Zim Container	2,815	12.5%	2,960	11.8%	-4.90%
Nat'l Shipping of Saudi Arabia	2,211	9.8%	3,044	12.1%	-27.37%
Costa Line	2,058	9.1%	2,430	9.7%	-15.31%
Trade Route Total	22,574		25,073		-9.97%
MEDITERRANEAN TO U.S. PACIFIC COAST					
Zim Conatiner	14,840	39.4%	13,435	42.6%	+10.46%
D'Amico	8,353	22.2%	5,995	19.0%	+39.33%
Italian Line	7,715	20.5%	5,329	16.9%	+44.77%
United Yugoslav	6,712	17.8%	6,780	21.5%	-1.00%
Trade Route Total	37,620		31,539		+19.28%

Carrier	1990 TEUs	1990 Mkt Sh	1989 TEUs	1989 Mkt Sh	% Volume Change
FAR EAST TO U.S. EAST COAST					
Maersk	81,444	16.2%	81,605	16.3%	-0.20%
Evergreen Line	70,975	14.1%	77,309	15.4%	-8.19%
Yangming Marine	55,681	11.0%	48,963	9.8%	+13.72%
Hanjin Shipping	55,531	11.0%	57,658	11.5%	-3.69%
OOCL	43,070	8.5%	42,389	8.5%	+1.61%
Trade Route Total	504,162		501,380		+0.55%
FAR EAST TO U.S. PACIFIC COAST					
American President	378,352	16.1%	397,842	17.1%	-4.90%
Sea-Land	266,049	11.3%	258,465	11.1%	+2.93%
Evergreen Line	247,041	10.5%	224,744	9.7%	+9.92%
Hanjin Shipping	181,772	7.7%	178,544	7.7%	+1.81%
K Line	168,206	7.2%	193,055	8.3%	-12.87%
Trade Route Total	2,348,244		2,321,953		+1.13%

Source: Journal of Commerce/Piers



Carriers argue that shippers have profited from the Shipping Act of 1984...



...while it has put a financial squeeze on them; ROI has been below 3.0 since 1985.

rate increases.

As of this writing, rate-raising efforts by carriers in the import trade from the Far East have apparently been undermined by a slew of Independent Actions, in which carriers discount from the conference tariff to secure cargo. This is a sure sign that even with the Transpacific Stabilization Agreement in effect—in which carriers voluntarily agree to limit ship space in order to raise rates—there is a surplus of capacity in the market.

The trade was abuzz in May, a typically critical month in the Pacific trades; that's when carriers in the Asia North American Eastbound Rate Agreement renew most of their service contracts with customers—and hold their breath to see if per-container rate increases will hold. The buzz this year was caused by Maersk, which reportedly broke from the Anera pricing line at least 400 times, unleashing a torrent of rate actions by sales reps at other lines desperate to secure cargo. Maersk, of course, was chastised publicly by its competitors. The real pressure on conference carriers, though, is applied by independent carriers such as Evergreen and Hanjin, which can offer extremely low rates due to a combination of lower operating costs and government subsidies.

APC: A LEADER REGROUPS

For American President Companies, 1990 was the year the other shoe dropped. Industry analysts watched the transportation and distribution conglomerate rapidly expand, then wondered whether its asset base would eventually overextend the company.

In late 1990, APC cut costs and improved working processes. Stockholders decided to bring in a new man as president and chief operating officer, former supermarket executive John Lillie.

Lillie says the firm's "Cost Repositioning and Process Simplification" effort has worked. Operating costs this year will be reduced by $40 million, he says. "We looked at the entire business," says Lillie, "and asked ourselves 'What is essential to servicing our customers?' " As a result, many layers of management in the North American operation were pared away.

In fact, APC has elected to focus on improved service to the shippers' agents who market the bulk of APC's stacktrain service. "We've consolidated truck and rail into one organization called Carrier Services," says Lillie, "because we believe in treating the entire move as one process."

When Lillie looks at the company's global picture, the key growth markets are foreign. The Mexican market is increasingly important, especially for north/south stack trains. As for the ocean business, the Middle East and Southeast Asia currently are the hottest regions, with China holding long-term significance. "Maintaining most-favored-nation status for China is very important to us," he says.

Shipping Act Review

This year the long-awaited review of the Shipping Act finally got underway, and initial debate has centered on the value of the conference system and the antitrust immunity that allows carriers to try to set standard rate levels. The irony of the situation, for carriers, is that they are lobbying to preserve the Shipping Act as it now exists—while at the same time they complain that it has been a failure at helping them earn a decent return on investment.

Antagonism between ocean shippers and carriers has sadly become the norm. Shippers complain that conferences are highhanded, and show little flexibility in responding to the market pressures that impact their customers' businesses. Carriers resent shippers who continue to press for lower rates while lines' struggle to earn a profit. This constant debate, however, seems to obscure some underlying issues. Many shippers we've talked with seem to express a genuine understanding of the carriers' difficulties. What they don't understand is how sales reps can be allowed to "give away the store" in rate negotiations.

"We are prepared to negotiate service contracts in good faith," said one shipper who requested anonymity. "But invariably, as the deadline draws near, reps come in with all kinds of crazy low rates, desperate to make quota. There really isn't that big a difference in service levels anymore, so I take the lowest offer—that's how I'm judged by my bosses. Then I turn around and hear how we shippers are killing the carriers by driving rates down. All I can do is laugh when I hear that."

A solution to this quandary might start, as Hugh Randall suggests, with "every shipper and carrier taking a good look in the mirror."

Reasons for Optimism

The next six months, at least, will be difficult for ocean carriers and shippers alike. The U.S. recession will continue to impact business. Yet despite current difficulties, Hugh Randall is optimistic. He believes that "smart carriers will do well in the '90s." There are environmental and economic forces at work, beyond the boundaries of the industry, which he believes will help the long-term fortunes of ocean carriers.

Asia will remain the engine of economic growth in the world, and trade to and from Asia will continue to steadily expand. Emerging markets such as South America and Eastern Europe hold promise. There will be constraints on shipbuilding. These constraints will be forged by a combination of investor skepticism and shipyard incapacity. "New ships cost three times as much as they did only two years ago," says Randall. "That will certainly help carriers focus their priorities."

Recession Pounds Ports

The recession has been tough on the nation's ports, which are among the first businesses to feel the effects of decreased trade. According to the American Association of Port Authorities President Erik Stromberg, the recession has adversely affected "ports on all coasts, and of all profiles." As public agencies, ports are particularly hamstrung to fight the effects of a downturn in trade. "Ports are reactive," says Stromberg. "They can only influence outside forces to a limited extent."

One issue they will be trying to influence is the current Shipping Act review, in which continued antitrust immunity for ports and marine terminals will be debated. Ports would hate to lose the freedom to discuss pricing issues among themselves, since that freedom goes a long way toward helping public agencies gauge an adequate return on investment. The Justice Department may, however, be intent on removing some antitrust elements from the Act, and if carriers maintain immunity, as expected, ports could lose it.

Another issue pressuring ports is the increasing cost of compliance with more stringent environmental regulations. For ports, Stromberg says, the balance between commercial concerns and environmental protection has never been more precarious. "Those ports that are dependent on dredging for their future growth, and that's most of them, will be fighting for survival." ■

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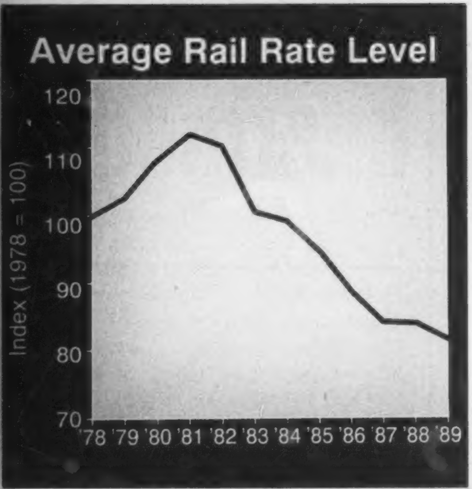
A Record Year For Railroads

The new decade began with a bang, and while the recession could affect short-term performance, the railroads appear well-positioned for growth.

By Jay Gordon, Executive Editor



The railroads managed to achieve record results last year despite yet another decrease in average rate levels.

The nation's freight railroads will do well to remember 1990. It was a year in which the industry set a number of significant records: ton-miles reached an all-time high of 1.043 trillion, and, more importantly, the railroads' return on investment reached a new high of 7.13 percent.

This performance was all the more remarkable given the the fact that rail rates again failed to keep pace with industry cost increases, resulting in yet another drop in real freight rates, which remain entrenched below 1980 levels.

"In the short run, the productivity curve ran ahead of the decline in rates," says Harvey Levine, vice president of economics & finance for the Association of American Railroads. "The programs (railroads have implemented) to become more efficient have been successful."

Those "programs" include a number of one-time writeoffs, often to pay for severance packages, that railroads took in recent years to get their cost structures under control. "The railroads have downsized their equipment fleets, their physical plant and their employees," says Dan Smith, manager-rail for Manalytics, Inc., a San Francisco management consulting firm specializing in freight transportation. "In the last 10 years, employment is down 50 percent."

"The special charges the railroads took for early retirement ran into the billions of dollars," adds Levine.

RAIL SYSTEMS: 1990 vs. 1989
($ millions)

	Major Railroads	1990 Revenue	1989 Revenue	% Change	1990 NOI	1989 NOI	% Change	1990 ROI	1989 ROI	Change
1.	Burlington Northern	$4674.41	$4606.29	+1.48	$414.08	$473.08	-12.47	10.80%	12.02%	-1.22
2.	Union Pacific	4587.74	4435.93	+3.42	548.42	540.13	+1.53	9.79	10.01	-0.22
3.	CSX Transportation	4435.76	4345.75	+2.07	370.10	324.47	+14.06	5.76	5.02	+0.74
4.	Norfolk Southern	3785.99	3694.08	+2.49	502.55	525.58	-4.38	10.29	10.91	-0.62
5.	Consolidated Rail	3292.86	3323.84	-0.93	295.27	117.75	+150.76	5.13	2.09	+3.04
6.	Southern Pacific Lines	2351.61	2270.98	+3.55	-27.20	-111.83	+75.68	NA	NA	NA
7.	Atchison, Topeka & Santa Fe	2111.62	2201.97	-4.10	278.20	-137.05	NM	8.60	0.00	+8.60
	Regional Railroads									
1.	Chicago Northwestern	$809.95	$812.18	-0.27	$53.77	$48.21	+11.54	4.54%	4.58%	-0.04
2.	Soo Line	593.96	539.21	+10.15	44.95	-19.94	NM	8.17	0.00	+8.17
3.	Illinois Central	544.17	547.04	-0.52	111.44	81.14	+37.35	15.13	8.42	+6.71
4.	St. Louis Southwestern	404.18	393.57	+2.69	9.53	6.67	+42.80	1.47	1.61	-0.14
5.	Kansas City Southern	319.89	315.41	+1.42	36.73	38.33	-4.17	9.41	9.90	-0.49
6.	Grand Trunk Western	310.05	327.05	-5.20	-8.84	1.32	NM	0.00	0.45	-0.45
7.	Florida East Coast	142.64	142.65	-0.01	5.22	7.64	-31.73	2.56	8.15	-5.59

Key: NOI = net operating income; ROI = return on investment; NM = not meaningful; NA = not available
Source: ICC

"Now we're reaping the benefits."

Railroad performance would have been even better last year if not for the recession, a fact that wasn't lost on stockholders. "The market is discounting the recession *vis a vis* the railroads," Levine says, "and I think they're right."

But any discussion of last year's results risks obscuring some of the larger, more significant changes currently underway in the rail industry:

- **The railroads have become more focused.** The railroads are finally learning that they can't be all things to all customers. "They're not trying to sell railroad service as a solution to every problem," says Manalytics' Dan Smith. "They have sharpened their approach to their customers and to selling rail service.

"Railroads used to look to each segment of their business to contribute to the bottom line," he adds. "But a lot of their traditional traffic went away; it didn't go to trucks, it simply *went away.*" Smith cites boxcar traffic as an example. In the 1940s and 50s, the boxcar was billed as the "do it all" method of transportation. Now, boxcar traffic is mainly confined to lumber, paper and canned goods—segments where it truly is the most effective choice. "Today," Smith says, "carriers are applying rail service where it works best."

This new focus also applies to the railroads' physical plant. "You no longer have major downsizing programs among the railroads," says Michael Lloyd, a rail analyst with Salomon Bros. "They're done shedding track, and they won't be walking away from as much freight any more. The traffic that could be lost to trucks has been lost. Some of that will start to come back."

Finally, Lloyd and others believe the railroads have also become much more focused when it comes to pricing. "They are pricing services to make money on them and walking away from the business if they can't," he says. "They are becoming more like truckers in that regard." Manalytics' Dan Smith says the railroads are gradually shifting their approach from trying to be the low-cost provider of transportation—the 'I'm cheap and you can put up with most of my problems' approach—to being the reliable provider that also happens to be cost-effective.

- **The railroads are well-positioned for the 1990s—and beyond.** "The new emphasis on environmental and quality of life issues, such as roadway congestion, will force public and private concerns to view the railroads as a gem," says the AAR's Harvey Levine. Clearly, legislation like the Clean Air Act will also boost the railroads. The Act mandates that by 1995, utilities use low-sulfur coal in their plants, most of which is located in western mines. The railroads, which already haul the vast majority of coal, will now be

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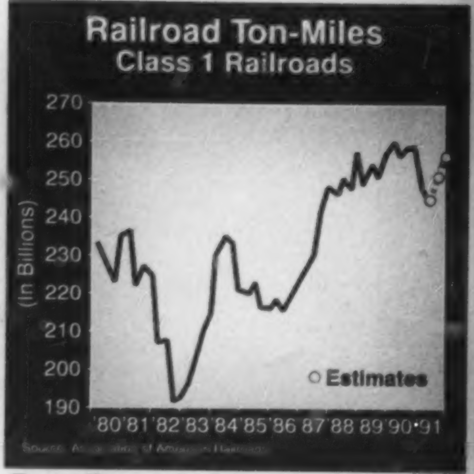


Ton-miles reached new records last year, but the recession will hurt 1991 results.

RAILROAD CARLOADS — 1990 vs. 1989

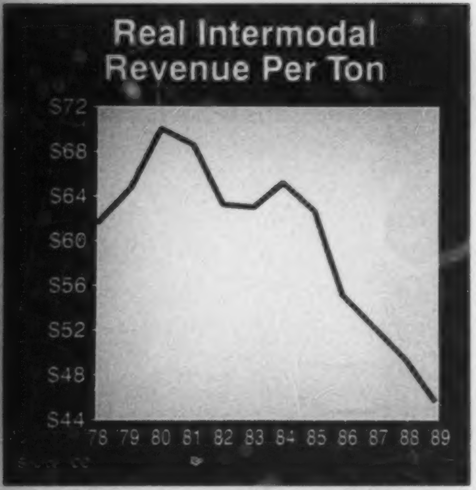
Class I Railroads	1990 Total	1989 Total	% Change
Atchison, Topeka & Santa Fe	1,050,459	1,075,424	-2.3
Burlington Northern	3,149,007	3,096,794	+1.7
Chicago & North Western	1,430,237	1,374,090	+4.1
Conrail	2,583,914	2,571,471	+0.5
CSX Transportation	4,602,808	4,657,657	-1.2
Florida East Coast	145,670	163,130	-10.7
Grand Trunk Western	451,265	474,157	-4.8
Illinois Central	770,115	815,979	-5.6
Kansas City Southern	405,427	377,080	+7.5
Norfolk Southern	3,184,090	3,192,428	-0.3
Soo Line	660,337	608,231	+8.6
Southern Pacific	1,366,463	1,365,932	—
Union Pacific	3,168,662	3,085,040	+2.7

Source: AAR

RAILROAD CARLOADS — 1990 vs. 1989

Regional Railroads	1990 Total	1989 Total	% Change
Apalachicola Northern	47,363	47,323	+0.1
Bangor & Aroostook	49,158	56,702	-13.3
Bessemer & Lake Erie	107,313	124,092	-13.5
Birmingham Southern	106,270	92,451	+14.9
Cambria & Indiana	14,386	14,408	-0.2
Duluth, Missabe & Iron Range	305,019	340,446	-10.4
Elgin, Joliet & Eastern	164,957	171,446	-3.8
Genesee & Wyoming	22,377	15,182	+47.4
Lake Superior & Ishpeming	77,765	145,425	-46.5
Mid Louisiana Rail	12,383	13,081	-5.3
Mid South Rail	164,984	151,856	+8.6
Monongahela	198,573	179,347	+10.7
Paducah & Louisville	198,423	185,333	+7.1
Pittsburgh & Lake Erie	65,509	60,720	+7.9
Pittsburgh & Shawmut	19,254	23,013	-16.3
Richmond, Fred. & Potomac	103,251	111,731	-7.6
South Rail	78,889	74,228	+6.3
Texas Mexican	36,904	38,212	-3.4
Trona	14,075	13,983	+0.7
Wisconsin Central	162,585	146,406	+11.1

Source: AAR



Making money on intermodal is tough while revenue per ton continues to drop.

hauling it over greater distances—increasing revenue ton-miles. And while coal may be a low-rated commodity, the costs to haul it are low too. "Coal is actually a high-margin commodity," says Michael Lloyd, "and if the railroads are hauling more of it, so much the better."

• **Intermodal's star continues to rise.** The increase in gas prices has helped, but that isn't driving the business, says Dan Smith. "Shippers aren't buying fuel economy, they're buying door-to-door service," he says. "It's getting easier for railroads to provide door-to-door service, while at the same time it's getting harder for trucks to do it." Truckers have periodic driver shortages, they must comply with emissions regulations and the highways are more and more congested, he adds. "As intermodal becomes more reliable, its market share will increase, as it has done already in key corridors."

Yet intermodal continues to suffer from what Smith calls the "Horns Effect." This is akin to the "Halo Effect," only in reverse: a traffic manager tried piggyback in 1973 and got burned, and now he won't even consider trying intermodal--even though the service has improved dramatically since then. "It will take a while for the perception to catch up with the reality," Smith says.

Double-stack trains are helping to speed that process. "The double-stack train concept has lowered the cost structure for the railroads," says Michael Lloyd. "They can make money on that traffic." He says services in which the railroads cooperate with with truckers, such as J.B. Hunt/Santa Fe's Quantum service, will continue to grow as a source of freight.

• **The railroads are doing a**

continued

PERFORMANCE OF TRUCK VS. INTERMODAL

		Performance Rating	
Rank	**Criterion**	**Truck**	**Intermodal**
1.	Service reliability	83%	68%
2.	Quality of pickup/delivery	86%	71%
3.	Availability of equipment	82%	71%
4.	Door-to-door transit time	85%	63%
5.	Quality of customer service	80%	72%
6.	Overall ease of doing business	83%	69%
7.	Low likelihood of damage	81%	64%
8.	Price	74%	75%
9.	Equipment quality	83%	68%
10.	Payment of damage claims	74%	60%
OVERALL		88%	73%

Source: ITA/NITL Intermodal Index

SHIPPER SELECTION CRITERIA FOR TRUCK AND INTERMODAL

Rank	Selection Criterion	Importance Rating
1.	Service reliability	93%
2.	Quality of pickup/delivery	92%
3.	Availability of equipment	88%
4.	Door-to-door transit time	87%
5.	Quality of customer service	85%
6.	Overall ease of doing business	83%
7.	Low likelihood of damage	82%
8.	Price	81%
9.	Equipment quality	80%
10.	Payment of damage claims	75%

Source: ITA/NITL Intermodal Index

INTERMODAL TRAFFIC – 1990 vs. 1989

	TOTAL UNITS			CONTAINERS			TRAILERS		
Railroad	**1990 Total**	**1989 Total**	**% Change**	**1990 Total**	**1989 Total**	**% Change**	**1990 Total**	**1989 Total**	**Change**
Burlington Northern	1,170,207	1,118,931	+4.6	638,339	523,167	+22.0	531,868	595,764	-10.7
Conrail	1,164,023	1,144,231	+1.7	531,276	523,232	+1.5	632,747	620,999	+1.9
Union Pacific	1,019,890	929,342	+9.7	557,251	510,331	+9.2	462,639	419,011	+10.4
Southern Pacific	1,013,307	922,447	+9.8	672,810	560,508	+20.0	340,497	361,939	-5.9
Atchison, Topeka & Santa Fe	974,147	970,148	+0.4	308,568	275,962	+11.8	665,579	694,186	-4.1
Norfolk Southern	822,199	810,118	+1.5	340,425	321,806	+5.8	481,774	488,312	-1.3
CSX Transportation	733,042	716,810	+2.3	339,952	322,004	+5.6	393,090	394,806	-0.4
Chicago & North Western	583,688	554,607	+5.2	508,845	488,024	+4.3	74,843	66,583	+12.4
Florida East Coast	398,085	377,068	+5.6	15,722	13,127	+19.8	382,363	363,941	+5.1
Soo Line	185,419	166,976	+11.0	120,284	63,780	+88.6	65,135	103,196	-36.9
Grand Trunk Western	114,388	93,246	+22.7	23,787	24,780	-4.0	90,601	68,466	+32.3
Kansas City Southern	73,701	71,202	+3.5	21,233	23,960	-11.4	52,468	47,242	+11.1
Wisconsin Central	20,454	12,163	+68.2	4,821	3,917	+23.1	15,633	8,246	+89.6

Source: AAR

TOP INTERMODAL MARKETING COMPANIES BASED ON 1991 ESTIMATED REVENUES

Company	Revenues
Hub Group	$390,000,000
Alliance Shippers	265,000,000
American President Dist. Services	260,000,000
GST Corporation	240,000,000
Mark VII Transportation	170,000,000
Con-Way Intermodal	150,000,000
Rail-Van Consolidated, Inc.	125,000,000
Manufacturers Consolidated Service	112,000,000

Source: Intermodal Marketing Association

better job of seizing the opportunities they have. "The railroads have a long history of half-hearted marketing," says Dan Smith. This is largely because they have long viewed themselves as "hamstrung" by regulation. While many of the service improvements made by the railroads since deregulation were legally and technically possible before that, deregulation gave the railroads a "psychological kick," Smith says. Now, building a customized service to meet the needs of a specific shippers seems like less of a stretch. Services like Conrail's Mercury, BN America and Norfolk Southern's Triple Crown are evidence of this.

The railroads also are more willing

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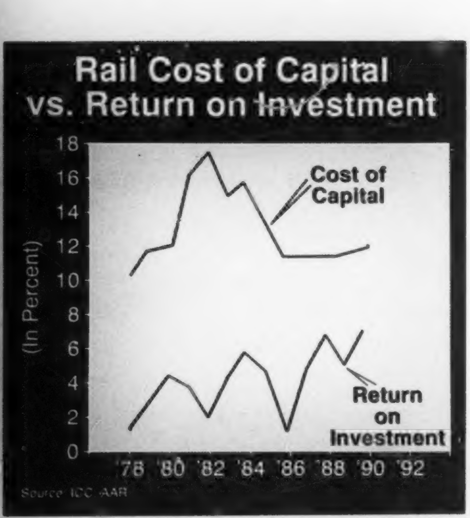


Source: ICC AAR

ROI set a record in 1990, but it still didn't meet the railroads' cost of capital. That's one reason they've had to downsize.

to invest when they see an opportunity. "For years you couldn't run double stacks from Chicago to Norfolk because the bridge clearances weren't there," Smith says. When it became clear there would be a significant volume of freight on this lane, Norfolk Southern went out and raised the clearances. The railroad now has access to a lot of freight and is more competitive with truckers. "The railroads are not viewed as a lucrative business, but these are extremely large corporations with huge asset bases," Smith says. "There is a lot of financial muscle that they can bring to bear on a problem."

What Lies Ahead?

While the railroads are leaner and meaner than ever, problems remain. Railroads are susceptible to downturns in the demand for goods, and thanks to a continued weak economy, the success of last year promises to be little more than a pleasant memory when 1991's results are tallied. Standard & Poors predicts the recession will cause rail traffic to slip 4.1 percent for the year, including downturns in almost every significant category, including intermodal, which has not lost ground in any annual period since 1980.

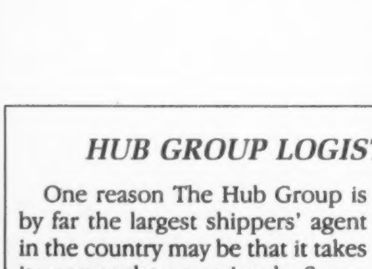
Productivity remains an issue. The railroads' continued success depends upon their ability to increase efficiency. That will become increasingly difficult. "In the long run, the productivity curve has to flatten out," says Harvey Levine of the AAR. "Certainly there are opportunities (for further improvements) over the next 10 years. But the long-term viability of the railroads cannot rest solely on improving productivity."

But the biggest burden is on the railroads to continue to prove themselves to shippers, says Dan Smith. "They have to build a loyal customer base," he says. And shippers owe railroads a chance to distinguish themselves, he adds. "People in distribution are going to have to wake up to what the railroads have to offer," says Smith. "They can't view it as an archaic last resort. What's needed is a mutual awakening." ■

HUB GROUP LOGISTICS PROVES THIS REALLY IS A SHIPPERS' AGENT

One reason The Hub Group is by far the largest shippers' agent in the country may be that it takes its nomenclature seriously. So seriously, in fact, that it recently set up a separate unit, Hub Group Logistics, to handle the intermodal logistics needs of its customers.

The concept should get a thorough testing now that Hub has signed a contract to handle the intermodal freight business for Sears Logistics Services (SLS). The SLS business is a significant coup for the fledgling Hub Group Logistics operation. Sears' intermodal shipments, which once numbered more than 100,000, have been reduced by half in the past three years. So the growth opportunities are impressive for Hub and its railroad partners.



Sears' decision to close its Terminal Freight Handling unit took the retailer's focus off of intermodal. "That focus is something we'll bring to the party," says Dave Yeager, president of The Hub Group. "Hub Group Logistics represents our effort to centralize those accounts that really need a centralized focus."

The tremendous computer resources Hub will bring to the party should help too. All Hub offices are equipped with IBM System 36 computers, which are connected to an AS 400 unit via the IBM Information Network (IIN). The system is then used to transmit bills of lading, car location messages and other data interactively, a capability that was particularly attractive to Sears.

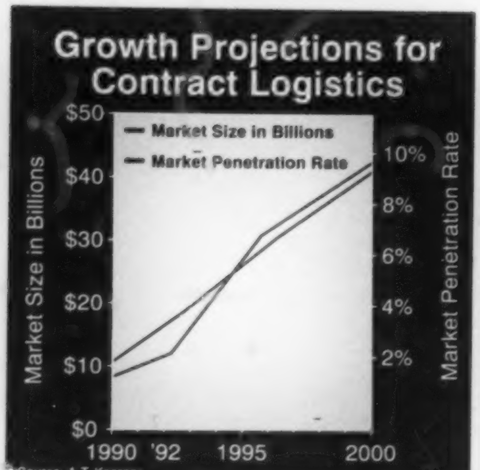
"When Sears enters an intermodal shipment into their computer, that information flows from the Sears information network into our AS 400," Yeager says. "We then identify by origin zip code which Hub operating company that dispatch is for, and we transmit that information to them." At the local level, managers who are familiar with local routing, service, costs and equipment availability can make the decisions that will provide Sears the best possible service.

Once the pick-up has been made, a confirmation report is sent to Sears, which automatically cuts a check for the transportation a few days later without having been presented with an actual invoice. Says Yeager: "It's virtually a paperless environment."

Contract Logistics Finds Slow Going

During the past three years, many companies have emerged claiming to be third-party vendors. But be on the lookout, most are just imitators.

By E.J. Muller, Senior Editor



Source: A T Kearney

Contract logistics will reach 6 percent market penetration by 1995, with the market size growing to $24 billion.

Contract logistics can extend beyond such basic services as warehousing and trucking into such things as sorting, tagging, pick and pack and light assembly. It's often said that the only limit is the imagination of vendors and clients.

In the United States, those imaginations have so far proved to be limited. Although some companies have been trailblazers in contract logistics, far more potential users have been reluctant to commit to the concept.

That hasn't prevented lots of new vendors from entering the market, of course. During the past three years as many as 50 companies have emerged, most at least claiming to provide third-party logistics service.

According to research conducted by Pat Byrne, vice president at A.T. Kearney, many of these firms are merely imitators. There are, however, a growing number of firms that have seriously invested in the market's potential: acquiring smaller regional trucking and warehouse operations, developing information systems and adding staff. Many of the leaders in this development are foreign companies, because in markets such as Europe and the Far East, contract logistics is already an accepted business practice.

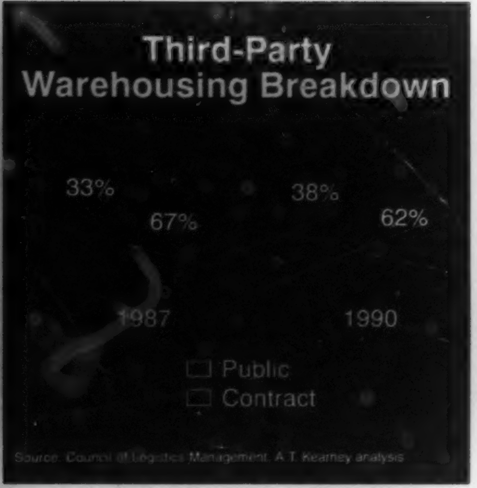
According to Kearney's research, contract logistics has so far penetrated only 2 percent of the total potential U.S. market. Kearney estimates total annual expenditures on logistics-related activities at $581 billion; of that, $350 billion, or 60 percent, is spent in areas that could be outsourced. Current penetration of contract logistics into that relevant market amounts to just $6 billion.

Most of the contract logistics activity in this country to date falls under the "project management" category; it is used for special circumstances outside normal business activities, rather than as a new method of handling daily operations. That is, in fact, a smart way for companies to experience the value of contract logistics without full-scale commitment to a new operations strategy. It may be that when these "projects" run their course, many users will decide to commit to the concept on a regular basis, dramatically solidifying the industry's potential.

It is expected that contract logistics will grow at a rate comparable to the development of supply chain management among manufacturing companies. The "extended" nature of supply chains argues for greater use of outside vendors who can link many stages of the logistics pipeline through sophisticated information systems which are easily accessible by the customer.

Today there are basically four types of contract logistics providers: carrier-based, warehouse-based, forwarder-based, and customer-based (the latter group is typically a traffic department that has been spun-off into its own profit center). Kearney's research shows that carrier-based third parties have the lion's share of contract logistics revenues, with $4.25 billion of the $6 billion market. Warehouse-based providers are next, with revenues of $1.1 billion, fol-

continued



Source: Council of Logistics Management, A.T. Kearney analysis

That contract warehousing is growing faster than public warehousing indicates this area is "ripe" for contract logistics.

lowed by forwarder-based companies at $400 million, and customer-based entities at $220 million.

Each of these entities has its own motivations for entering the market; typically it's a desire to find new business opportunities while leveraging assets. By and large, these companies are still defined by their origins, though Byrne says the lines are beginning to blur. "Roadway offers contract logistics, but it will always be perceived as a trucking company," he says. "But the market is starting to perceive some companies as pure contract logistics providers."

That's not to say that this perception places carrier-based companies at a disadvantage. According to the Kearney survey, shippers feel more comfortable with a carrier-based provider. Byrne believes shippers are attracted to the financial stability of a well-known transportation company, even if contract logistics is perceived as an adjunct to the core business. "Once the carrier proves itself," says Byrne, "the doors are wide open."

Some shippers are skeptical of carrier-based contract logistics vendors because they think their real motive isn't service, but the maximum leveraging of costly assets. There also have been numerous service failures among carrier-based providers, souring some companies on the concept. Byrne notes that there's increasing pressure on carriers to get serious about their contract logistics offerings. "Asset leveraging may be an initial ploy," says Byrne, "but it's not enough to sustain the business. The buyer must be convinced he's getting something more than he could buy already."

Of the four origin groups, Byrne says that U.S.-based growth has been strongest in the trucking sector, while warehouse-based operations have also grown steadily. Freight forwarding companies in the states are relatively new entrants to the market and have yet to attain the kind of all-encompassing "logistics agent" status that many foreign forwarding companies have. The slowest development has been in the "customer-based" group, where, aside from the parent company, a client list typically has to be built from scratch. ■

RYDER DEDICATES ITSELF TO FINDING LOGISTICS SOLUTIONS

Sunbelt Coca-Cola Bottling Co.'s 1990 merger with a neighboring bottler doubled the company's size and made it one of the top 10 Coca-Cola bottlers in the nation. In the process, it also doubled its distribution headaches.

Suddenly, Sunbelt had excess capacity and overlapping routes. It could have solved those problems on its own, but it didn't want to invest heavily in trucks and facilities, only to have to live by those decisions as the company grew. So like a growing number of companies, Sunbelt turned to Ryder System, Inc.

And Ryder came through with an innovative system that uses Sunbelt drivers to deliver beverages along traditional routes during the day, and Ryder drivers to ferry product between the company's plant and six distribution centers at night. Now, dedicated equipment is in use 20 to 24 hours a day, and Sunbelt's operating costs have decreased about four cents per mile—a decent chunk of change, since Sunbelt's trucks will log four million miles this year.

It is just this type of problem-solving that keeps Ryder at the top of the heap in dedicated contract carriage (DCC), a market segment that is growing up to twice as fast as any other part of Ryder's Vehicle Leasing & Services Division. In 1990, DCC accounted for 10 percent of the division's $3.3 billion in revenues, and it continues to enjoy double-digit growth. Overall, Ryder leads the $5 billion DCC market with a 6 percent share.

"What we're seeing is that with the profit pressures companies are experiencing, a lot of attitudes about using third-party logistics as an alternative are changing," says Larry S. Mulkey, president of Ryder Distribution Resources. "When they see that they can get quality service at a lower cost, they're more willing to say, 'We will explore that because we've run out of other alternatives.' " While in many cases the decision to outsource is still made by top management, more and more transportation and logistics people are open to discussing the idea. "The markets," says Mulkey, "are truly changing."

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Quality carriers don't just produce good performance reports – they build solid relationships with customers. In our eighth annual Quest for Quality survey, shippers rate the carriers they use, as they seek out those that will take the time and effort to learn their business, constantly improve performance and work toward a long-term relationship.

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Report cards on carrier quality reveal that shippers really want the basics done well. All the other bells and whistles count for extra credit.

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Logistics quality processes have been described as "immature," but these profiles of shipper and carrier quality efforts show that the movement has indeed taken hold.

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With the specter of competition from integrated carriers looming, airlines and forwarders are putting their differences behind them. Shippers stand to gain some global door-to-door service options.

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There's quite a debate these days about the value of the nation's flagship quality award. The consensus seems to be that it's not whether you win or lose, but how you play the game.

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QUEST FOR QUALITY

In our eighth annual Quest for Quality survey, the nation's shippers rate their carriers and select those that set the standard for logistics excellence.

Relationships. To be perceived as a Quality carrier, transportation companies must build solid relationships with customers—not just produce good performance reports. Shippers participating in our eighth annual Quest for Quality survey say they welcome closer relationships with their carriers; in fact, they seek out those that will take the time and effort to learn their business, constantly improve performance and work toward a long-term relationship.

Both shippers and carriers stand to gain. Earl Brinkley, distribution manager for John Deere Co., says his relationship with one carrier has constantly improved, to the point where his company now receives 99.2 percent on-time delivery and 100 percent on-time pickup. "In a word," he says, "they provide 'professionalism'; no gifts, no dinners, just excellent professional service."

Jim Bradley, traffic manager for Chatham Mfg. Co., stays by his carrier even though it doesn't offer "exorbitant discounts."

"What constantly impresses me," he says, "is the quality of its employees, who are loyal to the company and dedicated to serving its customers."

But the quantitative data in this Quest for Quality report also reflects shippers' critical concern about quality. The scores on the following pages are based on responses we received from shippers who regularly use the carriers they rated. Respondents used a three-point scale in their ratings with "1" being poor, "2" being average and "3" being outstanding.

THE QUEST FOR QUALITY SURVEY

The quantitative data in this report was provided by a series of direct mail questionnaires, each focusing on a specific mode of transportation. Regional surveys were developed for LTL carriers. Samples were developed for each questionnaire and were drawn from DISTRIBUTION Magazine's subscriber list. Survey candidates were selected based on size, geographic location and known usage of that type of transportation. Survey returns were reviewed for authenticity and edited to ensure consistent data. Tabulation and report preparation was done by CRS Inc., the fifth largest business-to-business research company in the U.S.

The scores reported in this survey are not intended to serve as a way of ranking carriers, and DISTRIBUTION Magazine advises shippers to ignore such improper attempts to use the scores in this report. DISTRIBUTION prohibits any reproduction or use of material in this article without the express written permission of the publisher.

In our direct mail surveys, we asked shippers to rate carriers in five performance categories:

- ***On-time performance:*** *on-time pickup & delivery; consistent, dependable schedules and transit times*
- ***Equipment & operations:*** *equipment availability; condition of equipment; helpfulness of drivers and staff; frequency and severity of loss & damage; safety*
- ***Value:*** *competitiveness of rates with carriers offering similar services; relationship of prices to service levels provided; simplicity of tariffs or contract prices*
- ***Customer service:*** *willingness and ability to quickly answer inquiries and solve problems; promptness of claims settlement; EDI capability*
- ***Sales staff:*** *knowledge of shipper needs and carrier capabilities; responsiveness to special requirements; frequency, regularity and effectiveness of sales calls.*

Our report recognizes as "Quality Carriers" only those transportation companies that excel in all five performance categories (see page 30). These carriers have set a quality standard in that they have:

- Identified shipper needs and developed innovative services to meet them
- Performed those services reliably and consistently
- Offered those services at reasonable prices
- Made doing business with them convenient
- Sold their services only after learning about the shipper's business
- Developed trust-based relationships with their customers.

Quality Carriers

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DISTRIBUTION'S 1991 QUALITY CARRIERS

NATIONAL LTL CARRIERS

Consolidated Freightways
Roadway Express, Inc.
Yellow Freight System, Inc.

SURFACE PACKAGE CARRIERS

United Parcel Service

INTERREGIONAL LTL CARRIERS

Churchill Truck Lines
NW Transport Service, Inc.
Preston Trucking Co., Inc.
Watkins Motor Lines

REGIONAL LTL CARRIERS

Northeast

A. Duie Pyle, Inc.
New Penn Motor Express
TNT Red Star Express

REGIONAL LTL CARRIERS

South/South Central

Arkansas Freightways, Inc.
Averitt Express
Con-Way Southern Express
Con-Way Southwest Express
Southeastern Freight Lines, Inc.

REGIONAL LTL CARRIERS

Midwest/North Central

TNT Dugan
TNT Holland Motor Express

REGIONAL LTL CARRIERS

West

TNT Bestway Transportation
TNT Reddaway

TRUCKLOAD & CONTRACT CARRIERS

Crete Carriers Corporation
J.B. Hunt Transport
M.S. Carriers, Inc.
Schneider National
Werner Enterprises

MAJOR RAIL SYSTEMS

Burlington Northern Railroad
Norfolk Southern Corporation
Union Pacific Railroad
Wisconsin Central Ltd.

INTERMODAL OPERATORS & STACK TRAIN SERVICES

Burlington Northern Intermodal
Maersk

RAIL THIRD PARTIES

American President Distribution Services

AIR EXPRESS CARRIERS

Federal Express Corporation

PASSENGER/CARGO AIRLINES

Alaska Airlines
Delta Air Lines, Inc.
Lufthansa German Airlines
Singapore Airlines
United Airlines

CONVENTIONAL AIRFREIGHT FORWARDERS

Associated Air Freight, Inc.
Kintetsu World Express

WATER CARRIERS

American President Lines
Crowley Maritime TMT
Maersk Line
Neptune Orient Lines
OOCL (USA) Inc.
Sea-Land Service, Inc.

DISTRIBUTION's designation of these companies as Quality Carriers means that each has received ratings at or above average in all five performance categories: on-time performance, value of service, equipment and operations, customer service and sales staff effectiveness.

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Quality in Trucking

LTL Carriers

National LTL carriers have an especially demanding role because shippers expect them to flawlessly perform every type of trucking service, from cross-country movements to overnight delivery. Our survey points out that the large national fleets fill their multiple roles extremely well.

"We use one of the big three LTL carriers to provide us with quick service to distant places at competitive rates," says Steve Gullett, distribution manager for Manco, Inc. in Hickory, N.C. "This carrier has made us look good, especially shipping to the West Coast."

Donna Brisbin of Fleetwood Systems in Orlando, Fla., praised another national carrier for its flexibility: "They always pick up promptly, even when we have strange or oversized loads," she says. "They have good delivery times and we have few problems with collect shipments, which are sometimes a major problem for some carriers."

Shippers were especially impressed with the training, knowledge and commitment of the sales people for national LTL carriers. Average sales effectiveness scores for these carriers were higher than those for any other type of LTL carrier.

"Our carrier's sales people, drivers and terminal managers are willing to be educated about the product we ship," says Becky Moss, freight traffic manager for Young Electric Sign Co. in Salt Lake City, Utah. "This helps reduce claims and speed up service."

The nationals also rated higher than most LTL carriers on their equipment and operations abilities. "Our national carrier is always willing to allocate large amounts of equipment in a timely fashion," says T.A. Carr, materials manager for SW Manufacturing in Smithville, Tenn. "They will also spot trailers, move equipment and provide other services not negotiated for at no charge."

Shippers did not have as good an impression of interregional carriers, which have the difficult task of competing with both regional and national LTL carriers. Average on-time performance scores for interregionals were lower than other LTL carriers. Several interregionals received excellent scores, however, indicating that shippers appreciate good service regardless of the type of LTL carrier. Hodge Bryan of Aerostar International in Sioux Falls, S.D., says his company depends on one interregional carrier because "its transit times are at least one day better than anyone else's to most areas."

NATIONAL LTL CARRIERS

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	***2.27***	***2.21***	***2.32***	***2.25***	***2.21***
ABF Freight System	*2.16*	*2.15*	*2.24*	*2.15*	*2.06*
Carolina Freight Carriers	*2.15*	*2.07*	*2.23*	*2.17*	*2.09*
Consolidated Freightways	***2.38***	***2.27***	***2.39***	***2.34***	***2.34***
Overnite Transportation	*2.23*	***2.21***	*2.19*	*2.09*	*2.04*
Roadway Express	***2.27***	***2.23***	***2.34***	***2.29***	***2.27***
Yellow Freight System	***2.34***	***2.24***	***2.40***	***2.34***	***2.32***

INTERREGIONAL LTL CARRIERS

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	***2.18***	***2.16***	***2.14***	***2.13***	***2.10***
ANR Freight System	*1.99*	*2.01*	*1.92*	*1.95*	*1.91*
Central Transport	*2.12*	***2.18***	*2.00*	*2.04*	*2.06*
Churchill Truck Lines	***2.25***	***2.18***	***2.19***	***2.15***	***2.20***
Frozen Food Express	*2.00*	*1.89*	*2.11*	*2.11*	*1.88*
NW Transport Service	***2.45***	***2.25***	***2.41***	***2.28***	***2.30***
Old Dominion Freight Line	*2.10*	*2.15*	*2.09*	***2.13***	*2.07*
Preston Trucking Company	***2.29***	***2.22***	***2.28***	***2.29***	***2.24***
Watkins Motor Lines	***2.21***	***2.20***	***2.32***	***2.21***	***2.20***

* *Averages calculated on basis of data for all carriers in category, not just those listed. Scores at or above average appear in boldface.*

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Quality in Trucking

LTL Carriers

Shippers in the Northeast and Midwest share similar opinions about their LTL carriers. The scores in our survey for these shippers show they appreciate on-time performance, consistency and a willingness to meet difficult requests. A special challenge in the Northeast is delivery to crowded cities.

"We have found a carrier that provides superior delivery times into the Northeast," says Randy Marts, traffic manager for Medrad, Inc. of Indianola, Pa. "This carrier offers reliable overnight service into New York City, which is hard to find. To date, we have never had a damage claim." Marts also notes the importance of helpful carrier sales people. "The sales rep for this carrier is one of, if not *the* most knowledgeable in the Pittsburgh area," he says, "even though he is new to this region."

Once these shippers find a carrrier that performs, they stick with it.

"I once called two carriers we frequently use for a pickup at 3:30 p.m., but they refused," says Elly Robinson, shipping coordinator for Panel Processing in Coldwater, Mich. "I then called a new carrier in the area that found the time for us and made room on its trucks. They now get most of our business."

Although we didn't ask shippers about financial stability, a number of respondents said the carrier's finances have become a part of their Quality evaluation. "We use one of the strongest carriers in the Northeast and Middle Atlantic," says Dale Sheehan, transportation analyst for Conair Corp. in East Windsor, N.J. "They are financially sound, which is important today. This financial strength helps them give exceptional on-time delivery and hire knowledgeable, professional people."

REGIONAL LTL CARRIERS – MIDWEST/NORTH CENTRAL

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	**2.30**	**2.16**	**2.26**	**2.21**	**2.11**
Advance Transportation	2.23	2.10	2.10	2.12	2.08
Alvan Motor Freight	2.14	2.10	2.14	2.00	2.05
Con-Way Central Express	**2.63**	2.15	**2.54**	**2.46**	**2.41**
Foreway Express	2.17	2.12	2.24	2.10	2.00
Gross Common Carrier	2.07	1.92	2.05	2.10	1.82
Hyman Freightways	2.04	2.14	2.11	2.09	2.00
Jones Transfer (MI)	1.97	1.97	1.86	1.88	1.69
O.K. Trucking	2.10	**2.18**	1.98	2.08	1.92
Spartan Central Express	2.16	**2.20**	2.20	2.07	1.82
TNT Dugan	**2.44**	**2.31**	**2.44**	**2.31**	**2.20**
TNT Holland	**2.50**	**2.33**	**2.44**	**2.37**	**2.28**

REGIONAL LTL CARRIERS – NORTHEAST

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	**2.29**	**2.18**	**2.23**	**2.21**	**2.15**
A. Duie Pyle	**2.53**	**2.34**	**2.37**	**2.39**	**2.24**
APA Transport	2.25	2.12	**2.25**	2.15	2.14
Guaranteed Overnite Delivery	2.21	1.95	2.07	2.02	1.86
New England Motor Freight	1.96	1.96	1.94	1.87	1.84
New Penn Motor Express	**2.49**	**2.18**	**2.30**	**2.29**	**2.16**
North Penn Transfer	2.10	2.10	1.95	2.08	2.07
St. Johnsbury Trucking	2.26	**2.19**	**2.27**	**2.26**	**2.17**
TNT Red Star	**2.50**	**2.37**	**2.45**	**2.42**	**2.38**
Ward Trucking	2.23	**2.20**	2.13	2.12	2.03

* *Averages calculated on basis of data for all carriers in category, not just those listed.*
Scores at or above average appear in boldface.

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Quality in Trucking

LTL Carriers

Less-than-truckload customers in the South and South Central U.S. may be the best-served shippers in the nation, judging from the scores and comments received in our survey. The average scores for LTL carriers in this part of the country were higher than for all other LTL carriers in nearly every performance measurement.

LTL carriers in the South especially excelled in on-time performance.

"Our carrier gives us over 99 percent on-time deliveries, and pickups will not vary more than 15 minutes 99 percent of the time," says Thomas R. Rhyne, traffic administrator for Joslyn Clark Control in Lancaster, S.C. "Also, they handled 946 shipments last year without a claim."

"Our regional carrier gives us consistent, dependable deliveries, including Saturdays, and they go the extra mile to assist with things like free pallets," says Joe Corder, distribution center manager for Johnstone Supply in Memphis, Tenn.

Many northern shippers using LTL carriers based in the South report extraordinary effort from these companies. "We get next-day service from origin points in Georgia to our plant in northern Indiana from our leading regional carrier," says Ron Peerman, manager-shipping & receiving for Flanders Electric Motor Service in Evansville, Ind. "On several occasions when a shipment was picked up in Georgia, this carrier opened its terminal in Owensboro, Ky., so we could get our shipment on Saturday instead of waiting until Monday."

Ted Baker, director of distribution for Nutri/System of Blue Bell, Pa., agrees: "From the first day, one regional carrier has far exceeded our requirements and expectations," he says. "We have difficult deliveries, and we have always experienced start-up problems when we bring on a new carrier. Not with this one. We did not receive one phone call."

Shippers also point to superior customer service from LTL carriers in the South when it comes to accurate billing and problem resolution.

"I recently switched to a major carrier based in the South and their response to our company's needs has been outstanding," says Robert Discher, senior vice president for Vispac Inc. in Livonia, Mich. "Their invoicing accuracy is excellent."

"Our carrier has handled over 6,000 shipments for us with less than .5 percent customer complaints or incidents," adds Ken Durwin, supervisor-transportation pricing, Olin Corp., Stamford, Conn.

Shippers also appreciate it when carriers have quality personnel. "Our carrier's salespeople know their limitations, and they don't promise what they can't deliver," says James W. Ball, procurement and traffic manager for Sauces Unlimited in San Antonio, Texas.

"Our carrier has provided extraordinary service to our southeastern distribution center," adds R. Tony Jordan, warehouse manager for Freightliner Corp. in Duluth, Ga. "They have the most dependable and courteous staff I have ever dealt with, from their drivers and terminal managers to their sales and customer service representatives."

REGIONAL LTL CARRIERS – SOUTH/SOUTH CENTRAL

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	***2.38***	***2.24***	***2.31***	***2.25***	***2.16***
AAA Cooper Transportation	*2.33*	*2.13*	*2.27*	*2.22*	*2.07*
Arkansas Freightways	***2.54***	***2.42***	***2.54***	***2.34***	***2.40***
Averitt Express	***2.50***	***2.37***	***2.48***	***2.43***	***2.30***
Central Freight Lines (TX)	***2.39***	*2.09*	*2.24*	*2.12*	*1.97*
Con-Way Southern Express	***2.41***	***2.27***	***2.47***	***2.35***	***2.27***
Con-Way Southwest Express	***2.56***	***2.34***	***2.59***	***2.42***	***2.42***
Estes Express Lines	*2.29*	*2.13*	*2.07*	*2.17*	*2.09*
Merchants Fast Motor Lines	*2.22*	*2.11*	*2.07*	*2.02*	*1.89*
Red Arrow Freight Lines	*2.27*	*2.00*	*2.15*	*2.15*	*2.00*
Sala Motor Freight	*2.33*	*2.14*	*2.25*	*2.14*	*2.05*
Smalley Transportation	*2.14*	***2.24***	*2.05*	*2.00*	*2.06*
Southeastern Freight Lines	***2.61***	***2.40***	***2.49***	***2.50***	***2.31***
Spartan Express South	*2.33*	***2.27***	*2.29*	***2.25***	***2.22***
Transus	*2.23*	***2.34***	*2.19*	*2.21*	*2.10*

* *Averages calculated on basis of data for all carriers in category, not just those listed. Scores at or above average appear in boldface.*

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Quality in Trucking

LTL Carriers

Shippers in the West are a demanding lot, according to our survey. Average scores for most categories were slightly lower than for other regions of the country, especially in sales force effectiveness. But comments about specific carriers indicate that excellent service breeds loyalty among these shippers.

"Our western carrier provides on-time pickups 100 percent of the time, on-time delivery 98 percent of the time and has a claims ratio of less than 0.4 percent," says Michael Margulis, traffic manager for Meldisco in Rancho Cucamonga, Calif. "They have no problem with unusual requests, such as a Saturday pickup, and they have sales and operations people who know my business and respond quickly to my needs."

Shippers point out that mountains, isolated communities and other peculiarities of western states create unique service requirements. These shippers are appreciative of carriers that consistently meet these special needs.

"Besides the usual overnight delivery from the Los Angeles and San Francisco Bay areas, our regional LTL motor carrier handles deliveries to all of our outlying districts and power plants," says Don Nielsen, traffic administrator for Sierra Pacific Power Company in Reno, Nev. "On more than one occasion, this carrier has provided immediate, straight-through emergency deliveries to our power plants during an outage."

Shippers also gave high marks to specific carriers for excellent operations and cooperation.

"Our carrier in the West cares about its customers and goes the extra mile for them," says Tom Stawarski, traffic manager for the Amurol Products division of Wm. Wrigley Co. in Naperville, Ill. "When problems occur, only one phone call is needed to solve them. You can call them and forget it."

Surface package services are viewed as a special type of LTL carrier, and shippers in our survey judged them by the same standards they use to measure conventional trucking companies. In three of the five performance categories, the package carriers as a group compared favorably with other LTL carriers, especially in value and operations. Shippers apparently agree that parcel carriers deserve the reputation they've developed for engineering efficiency and low prices. But the group compared less favorably in customer service and sales effectiveness.

"The only area in which our parcel service is lacking is in on-call pickup," says Steve Bresuer, purchasing manager for Delaware Valley Block in Port Jervis, N.Y. "They are price competitive, responsive and cover a broad geographic area."

REGIONAL LTL CARRIERS–WEST

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	***2.31***	***2.17***	***2.34***	***2.18***	***2.09***
Con-Way Western Express	*2.29*	***2.24***	***2.43***	***2.21***	***2.16***
DiSalvo Trucking	*2.16*	*2.02*	*1.89*	*1.73*	*1.72*
G.I. Trucking	*1.95*	*2.01*	*2.10*	*1.90*	*1.90*
Lynden Transport	*2.19*	*2.06*	*2.31*	***2.25***	*1.94*
TNT Bestway Transportation	***2.35***	***2.23***	***2.38***	***2.22***	***2.22***
TNT Reddaway Truck Line	***2.67***	***2.48***	***2.58***	***2.52***	***2.47***
TNT United	***2.33***	*2.04*	*2.26*	*2.11*	***2.12***
Viking Freight System	***2.34***	*2.07*	***2.39***	***2.21***	*2.00*
Willig Freight Lines	*2.25*	*2.08*	*2.33*	*2.11*	*1.95*

SURFACE PACKAGE CARRIERS

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	***2.24***	***2.26***	***2.40***	***1.97***	***1.85***
Roadway Package System	*2.10*	***2.28***	*2.30*	***2.10***	***2.08***
United Parcel Service	***2.51***	***2.40***	***2.60***	***2.09***	***1.93***
U.S. Postal Service	*1.87*	*1.99*	*2.12*	*1.67*	*1.53*

* *Averages calculated on basis of data for all carriers in category, not just those listed. Scores at or above average appear in boldface.*

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Quality in Trucking

TL Carriers

Shippers gave their truckload carriers some of the highest scores in our survey for three out of the five performance categories. In only one category—sales force effectiveness—did shippers find most TL carriers lagging most other modes of transportation. TL carriers especially excelled in the value category.

A surprising number of shippers said value, not just cost, was their primary measure of quality and that TL carriers provided greater value than any other type of carrier.

"One of our primary TL carriers provides tremendous flexibility and responsiveness to varying shipper needs," says Steve Sukovich, distribution manager for Procter & Gamble in Jackson, Tenn. "I never have problems with their reliability; they provide on-time pickup and delivery and suitable equipment. They are a higher cost carrier, but they're a good value."

Average TL carrier scores were also extremely high in the equipment and operations category. Shippers using the larger TL companies expressed the most satisfaction.

"We use a major truckload carrier because it has an ample supply of equipment along with knowledgeable and experienced dispatchers," says Gary Tebbe, traffic manager for Benjamin Ansehl Co. of St. Louis, Mo. However, even smaller truckload carriers had their share of enthusiastic customers.

"Our favorite truckload carrier is not one of the largest, but it provides consistent on-time pickup and delivery and is creative in suggesting ways we can work together to reduce costs and increase service," says Paul Puttkammer, manager of traffic operations for Storage Technology Corp. in Louisville, Colo.

Nor did most shippers seem to care whether or not their carriers had company-owned equipment or used owner operators.

"We have been extremely pleased with our TL carrier, which uses 100 percent owner operators," says C.L. Taylor, traffic manager for BICC Cables Corp. of DuQuoin, Ill. "They have the best service of the 50 TL carriers we use. Their sales and dispatch staffs are knowledgeable and helpful, their drivers are treated with respect and act accordingly. There is excellent communication overall."

For most TL shippers, the ability of the carrier to solve their immediate needs was *the* commanding measure of carrier quality.

"Our best TL carrier is versatile in that it provides flatbeds, vans and reefers," says Doug Morris, transportation manager for Pacific Southwest Container in Modesto, Calif. "They pick up in hours and their drivers are friendly and informed. They don't make their problems my problems."

For many shippers, the immediate need they constantly expect carriers to meet is to make quick pickups and provide rapid transit times.

"Our primary TL carrier routinely provides regular pickup and delivery, but what sets this carrier apart is its willingness to come through when we need a team driver unit to move a hot load fast," says Marshall Gode, traffic manager for Pave Mark Corp. in Atlanta.

TRUCKLOAD & CONTRACT CARRIERS

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	***2.26***	***2.23***	***2.30***	***2.14***	***2.00***
Builders Transport	***2.29***	***2.31***	*2.08*	***2.17***	*1.62*
Burlington Motor Carriers	*2.09*	*2.00*	*2.20*	*1.89*	***2.00***
CRST	*2.14*	***2.23***	*2.15*	*2.08*	*1.64*
Contract Freighters	***2.70***	*2.20*	***2.50***	*2.00*	***2.00***
Crete Carriers	***2.40***	***2.40***	***2.50***	***2.44***	***2.44***
Dart Transit	*2.10*	*2.10*	*2.10*	*1.90*	*1.90*
Freymiller Trucking	*2.00*	***2.25***	***2.50***	***2.25***	***2.00***
J.B. Hunt Transport	***2.52***	***2.41***	***2.59***	***2.28***	***2.14***
M.S. Carriers	***2.50***	***2.25***	***2.56***	***2.44***	***2.06***
North American V.L. Comm.	*1.80*	*2.20*	*2.20*	*1.70*	***2.00***
Poole Truck Line	***2.30***	***2.30***	*2.10*	*2.00*	***2.11***
Ranger Transportation	***2.31***	*2.00*	*2.19*	*2.13*	*1.93*
Schneider National Carriers	***2.28***	***2.26***	***2.50***	***2.41***	***2.31***
Werner Enterprises	***2.50***	***2.48***	***2.57***	***2.35***	***2.10***

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Quality in Rail Service

Railroads

Average scores for major railroads were uniformly low. Value and sales force effectiveness were particularly sore spots, though in the sales category railroads did garner better marks than their competitors in the truckload industry.

"We are serviced by only one railroad and they haven't learned how to spell quality yet," complains Darrel Copeland, manager of transportation services for Roseburg Forest Products in Roseburg, Ore.

Carl Hoy, distribution manager for Cargill, Inc. in Dayton, Ohio, says he is served by two rail carriers—with distinctly different approaches to service. One carrier has consistently better transit times, sometimes as much as two days, for shipments moving the same distances to the same destinations. In addition, he singles out the faster carrier for helping him meet one of his critical objectives. "Good utilization of our 600-car rail fleet is important to us," Hoy says. "If we need information on the location of a car, we can get it either through their 800 number or by calling our account rep directly. If a car is hung up somewhere, these people are responsive to us."

Another category in which his two carriers differ is equipment supply. Cargill moves some products in hopper cars, and while this equipment is still fairly easy to find, one railroad, in an effort to cut expenses, has begun shrinking its fleet of these cars by attrition. While the rates that carrier charges him to move freight in a car that he supplies are lower, he says they are not fully compensatory. Meanwhile, the other carrier he uses has invested in its hopper car fleet.

Hoy also finds that billing accuracy, though not a major problem, is a constant thorn. "As far as billing accuracy goes, things have been static," he says. "There are 'X' number of bills wrong each month."

His intermodal agent has performed well, but Marty Fulbright, general manager of Contour Packaging in Kansas City, Kan., is frustrated with the quality of his rail service. He remembers the first time he tried to ship to a new customer in California. "I went to a lot of trouble to get this shipment together," he says, "and then the railroad dropped the ball." The shipment sat on a rail ramp for eight days, and Fulbright almost lost the customer. He's shipped truckload to that customer ever since.

Despite the relatively low scores, however, shippers recognized their rail carriers for high performance levels in certain categories.

"Our carrier has excellent transit times to key areas," says Lonnie Maggart, manager of transportation at Central Soya Co., Fort Wayne, Ind.

"The carrier we use consistently does a good job and saves our company money," adds Ken Kirkpatrick, manager of distribution for Blue Diamond Growers in Sacramento, Calif.

"Our carriers have faster intermodal service and faster interchanges than the competition," says John Lynch, vice president of Government Suppliers Consolidation Services, Havertown, Pa.

MAJOR CLASS I RAILROADS

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	**2.14**	**2.06**	**2.15**	**2.12**	**2.09**
Burlington Northern	**2.27**	**2.15**	**2.29**	**2.20**	**2.12**
CSX Transportation	2.11	2.00	**2.19**	**2.16**	2.00
Canadian National	2.10	2.00	**2.20**	2.10	**2.10**
Canadian Pacific	**2.20**	**2.15**	2.13	**2.27**	2.08
Chicago & North Western	2.00	**2.13**	2.09	**2.13**	**2.10**
Conrail	**2.19**	**2.11**	2.07	2.11	2.04
Florida East Coast	**2.23**	**2.08**	2.00	2.00	2.08
Grand Trunk Western	2.10	1.88	2.00	1.90	1.80
Illinois Central	2.00	1.85	2.00	1.90	1.89
Norfolk Southern	**2.20**	**2.06**	**2.30**	**2.13**	**2.22**
Santa Fe (AT&SF)	2.10	**2.08**	2.10	2.05	2.00
Soo Line	**2.14**	2.05	2.00	**2.24**	2.05
Southern Pacific Line	2.00	1.90	2.00	1.88	2.00
Union Pacific Line	**2.23**	**2.20**	**2.24**	**2.33**	**2.36**
Wisconsin Central	**2.50**	**2.33**	**2.50**	**2.33**	**2.25**

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Quality in Rail Service

Intermodal Carriers

Scores for intermodal operators and rail third parties were among the highest overall marks for any mode in the survey. Intermodal operators rated especially high in on-time performance, value and sales effectiveness; in fact, scores in these areas were tops in the poll. Third parties—shippers agents and consolidators—scored well in customer service and sales effectiveness. It's interesting to note that average scores for these companies compared favorably with those for truckload carriers—which they usually compete against.

Shippers understand the tradeoffs between price and service when evaluating intermodal service; transit times that are a day or two slower than truck do not deter them. Mark A. Schroeder, supervisor of sales administration for The Montague Co. in San Francisco says his intermodal carrier's transit times from California to Florida may be seven to 10 days, where a truckload carrier could have it there in five. But the pricing is commensurate, and, more important, his carrier always calls and gives him the routing of his shipments ahead of time. "They know what the transit time will be based on the railroad routing, and it rarely varies by more than a day," he says. Since he does the company's production scheduling, consistent transit times are crucial.

It helps, Schroeder adds, that the carrier has an excellent relationship with its drayage agents. This helps him to get equipment picked up and delivered when he needs it. "They are a no-nonsense type of operation." he says.

The development of close working relationships between intermodal shippers and carriers apparently has gone beyond the "hype" stage.

"Our shippers' agent provides a valuable intermodal service in that it helps plan our total movement and consolidation service for us," says Alan Murakami, a transportation analyst with Mitsubishi Electronics America in Cypress, Calif.

"Our third party has always given us competitive pricing, but more importantly, they understand the concept of customer service," says Paul Higgins, traffic manager for Rich's Department Stores in Salem, Mass. "They don't just pay lip service to it."

A carrier his company has singled out "does the best job of making delivery appointments and effecting delivery," says Dan Garland, director of transportation for Tri Valley Growers in San Francisco.

A crucial link in these relationships is the intermodal sales rep. "I judge a carrier by the rep that calls on me," says Mark A. Schroeder of The Montague Co. He says his rep's knowledge of rail vs. truck is excellent. "She knows how truckers move freight through their systems, and she knows about piggyback and containers. Her follow-up is excellent, and she gets things done." He's also impressed that she's been with the same company for some time. In an industry where turnover is routine, stability is a welcome change.

RAIL THIRD PARTIES

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	***2.24***	***2.22***	***2.17***	***2.30***	***2.28***
American Pres. Dist. Services	***2.38***	***2.38***	***2.25***	***2.31***	***2.31***
Alliance Shippers	*2.19*	*2.13*	*2.13*	***2.38***	***2.50***
GST Corporation	***2.27***	*2.18*	*1.80*	***2.45***	***2.45***
The Hub Group	***2.28***	***2.24***	***2.36***	***2.36***	*2.16*

INTERMODAL OPERATORS & STACK TRAIN SERVICES

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	***2.51***	***2.34***	***2.36***	***2.23***	***2.29***
American Pres. Intermodal	*2.46*	***2.36***	***2.39***	*2.21*	*2.25*
Burlington Northern Inter.	***2.69***	***2.54***	***2.46***	***2.23***	***2.31***
CSX Intermodal	*2.36*	*2.09*	*2.18*	***2.27***	*2.27*
Maersk	***2.67***	***2.44***	***2.67***	***2.33***	***2.78***
Mitsui O.S.K. Lines	***2.67***	***2.50***	***2.67***	***2.33***	*2.17*
Santa Fe (AT&SF)	*2.40*	*2.20*	*2.10*	*2.20*	*2.22*

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Quality in Airfreight

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Cargo & Express Carriers

Shippers have a high regard for the capabilities of most all-cargo airlines, judging by their ratings. All-cargo carriers received some of the highest average scores in the survey for on-time performance, value and equipment & operations.

Dedicated cargo lift was a major consideration for many shippers.

"Carriers with their own planes are in total control of their freight," says Leann Baker, corporate traffic, Harter Group, Middlebury, Ind. "This lift reduces freight bumping and speeds deliveries."

The reason most shippers use all-cargo carriers is to meet specific service needs, and they rated their carriers primarily on how well they performed specific assignments.

"I needed to transport a valve from Houston to Bellingham, Mass., an off point," says J.A. Vasconcellos of Fluor Daniel, Inc. in Sugarland, Texas. "My all-cargo carrier arranged it all and it was delivered the next day so that workers could install it the same day. That's performance."

Air cargo shippers do not hide the fact that they are very demanding of their carriers, but they also recognize carriers that truly go out of their way to provide an extra measure of service.

"The cargo carrier I use is one of the few carriers that actually fly into Reno," says Don Nielsen, traffic administrator for Sierra Pacific Power Co. in Reno, Nev. "They have performed miracles for us in numerous emergency situations, such as when one of our power plants is down. They have arranged delivery to our outlying locations, even in the early hours of a Sunday morning."

The air express industry's reputation for high reliability is clearly reflected in their scores in our survey. Shippers say they feel more comfortable dealing with these carriers than with any others.

"When we turn over a package to our express company, we know it will be handled properly and delivered on time," says Michael Brink, distribution manager for Massey-Ferguson in Stockton, Calif. But shippers said they also hold air express carriers to a higher standard than carriers in most other modes of transportation.

"I chose our express carrier because I have data that shows it consistently picks up and delivers on time, maintains excellent shipment control, and handles claims well," says George Yarusavage, corporate manager of transportation for GTE in Stamford, Ct.

ALL-CARGO AIRLINES

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	**2.33**	**2.21**	**2.38**	**2.14**	**2.03**
Airborne Express	2.22	2.19	2.24	2.07	1.91
Burlington Air Express	2.16	2.19	2.27	**2.16**	**2.15**
Emery Worldwide	2.09	2.11	2.18	2.06	**2.14**
Federal Express	**2.69**	2.18	**2.61**	**2.34**	**2.05**
Nippon Cargo Airlines	**2.42**	2.16	2.32	**2.26**	2.00
United Parcel Service	**2.39**	**2.38**	**2.54**	1.99	1.89

AIR EXPRESS CARRIERS

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	**2.33**	**2.20**	**2.33**	**2.09**	**1.94**
Airborne Express	2.31	**2.31**	2.27	**2.15**	1.90
Burlington Air Express	2.19	2.19	2.28	**2.14**	**2.12**
DHL Worldwide Express	**2.35**	2.19	2.18	**2.11**	**1.96**
Emery Worldwide	2.10	2.09	2.13	2.07	**2.09**
Federal Express	**2.73**	**2.25**	**2.63**	**2.37**	**2.11**
TNT Express Worldwide	2.23	2.00	2.16	1.94	**1.94**
United Parcel Service	**2.41**	**2.32**	**2.48**	2.01	1.87
U.S. Postal Service	1.90	2.01	2.11	1.61	1.44

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Quality in Airfreight

Airlines

Combination passenger-cargo airlines as a group received lower overall scores than the all-cargo carriers in all five performance categories. A number of shippers commented, however, that they were beginning to see significant improvements among the airlines.

"The airline we use most frequently continues to improve its operations, quality of freight handling and availability on flights," says John Myer, who works in the transportation support department of GTE at the Dallas-Ft. Worth Airport in Texas. "This carrier has gone out of its way to handle large items other carriers cannot, or will not carry."

Few shippers complained about airfreight rates. Most seem to feel that the value of air service is worth the price, especially if the service is unique. For example, shippers had many favorable comments about counter-to-counter services, which they said filled an important niche for same-day service. "The carrier we use most often is worth the high price because of the timeliness of the service," says Jason Ortega of T.J. Snow Co. of Chattanooga, Tenn.

The greatest area of dissatisfaction was sales effectiveness, primarily because air carrier sales people rarely call on shippers. There were notable exceptions, however. Shippers gave high marks to carriers that viewed the shipper as a direct customer.

"The airline I use is very helpful," says Susi Proffit, export manager for American Packing and Shipping in Alexandria, Va. "Their office people are knowledgeable, and the carrier provides good door-to-door service with good rates."

And although average customer service scores for airlines lagged those for most other types of carriers, shippers pointed out that specific carriers have developed excellent customer service systems.

"The airline we use can trace problems 24 hours a day," says Brian Meleski, manager, Universal Fish & Handling in Los Angeles. "They will call people at airports and send someone out on the floor for a visual check if we ask. Rarely is freight bumped once it is set up for flight."

Shippers that felt they had to deal directly with the airlines because of the nature of their products saw tremendous differences in the quality of service among the airlines.

"We have a special appreciation for the one airline that has helped us on our flights to Miami with frozen products," says E.J. Corbey, manager of transportation for Bachman's International in Minneapolis, Minn. "Most other airlines don't seem to care about our business."

PASSENGER/CARGO AIRLINES

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	**2.18**	**2.15**	**2.24**	**2.06**	**1.90**
Air Canada	**2.22**	2.11	**2.28**	2.00	1.88
Air France	**2.20**	2.00	**2.24**	1.88	1.75
Alaska Airlines	**2.40**	**2.40**	**2.40**	**2.40**	**2.30**
Alitalia	1.92	2.00	1.92	1.83	1.75
American Airlines	1.99	**2.15**	**2.24**	1.98	**1.92**
British Airways	2.17	**2.17**	**2.26**	2.00	1.87
Continental Cargo	1.95	1.86	1.91	1.95	**2.00**
Delta Airlines	**2.27**	**2.21**	**2.34**	**2.20**	**1.93**
Japan Air Lines	**2.52**	**2.19**	**2.43**	**2.11**	1.84
KLM Royal Dutch Airlines	2.15	**2.15**	2.20	1.95	1.80
Korean Airlines	2.17	2.11	2.17	2.00	1.81
Lufthansa	**2.42**	**2.20**	**2.44**	**2.23**	**2.00**
Northwest Cargo	2.15	**2.18**	**2.26**	**2.10**	1.84
Pan American	2.00	1.91	1.82	1.70	1.70
Singapore Airlines	**2.50**	**2.25**	**2.33**	**2.27**	**2.00**
Southwest Airlines	**2.33**	**2.33**	2.17	2.00	**2.00**
Trans World Airlines	1.93	1.96	1.96	1.85	1.81
United Airlines	**2.19**	**2.18**	**2.32**	**2.25**	**1.98**
USAir	**2.27**	**2.24**	**2.24**	**2.17**	1.85

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Quality in Airfreight

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Air Forwarders

Most shippers gave air forwarders only average scores in all five performance areas. However, shippers with stringent service requirements were much more generous with their ratings and comments.

"As a shipper of vaccines, we have very strict delivery requirements," says Louis Mangino, manager-distribution & traffic for Connaught Laboratories in Swiftwater, Pa. "Our forwarder is extremely sensitive to our requirements. They let us know of any problem situations, and they put a lot of effort into resolving them."

Shippers tended to be more demanding of forwarders than they were of other types of carriers, but they also are loyal to a good forwarder when they find one. "We stick with our forwarder because it always seems ready and willing to tackle any special need we have," says Karen Staver, distribution analyst for Eljer Industries in Plano, Texas. "This forwarder has even pulled off some 'same morning' deliveries for us."

One of the measures most shippers use for quality of forwarders is how well and how quickly it learns the shipper's particular needs.

"Our forwarder is perceptive of our needs," says Glenda Sue Kindziera, corporate traffic manager for Handleman Co. in Troy, Mich. "I do not have to call them to advise of problems; they recognize the problem first, react, and then call me."

Forwarders' average scores for value were lower than those of other carriers. But shippers say they're beginning to measure forwarders and carriers differently when it comes to value. "In the past year, my forwarder has saved my company considerable dollars," says Tim Seyler, traffic manager for Decision Data Corp. in Horsham, Pa. "Savings, and the quality of service, is what I measure."

Other shippers say precision pricing is important. "Our forwarder is exact on door-to-door pricing," says A.M. Gutman, transportation/distribution specialist for Cooper Energy Services in Mt. Vernon, Ohio. "It's important that we get no surprises when we receive the bill."

CONVENTIONAL AIRFREIGHT FORWARDERS

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	**2.21**	**2.12**	**2.17**	**2.17**	**2.10**
Air Express International	2.19	1.95	2.07	2.03	1.95
Amerford International	1.95	2.10	2.10	2.00	2.00
Associated Air Freight	**2.39**	**2.21**	**2.32**	**2.32**	**2.32**
Circle Air Freight	**2.22**	2.07	2.15	**2.22**	**2.13**
Danzas	2.16	**2.16**	**2.18**	**2.20**	**2.14**
Eden Air Freight	2.20	**2.16**	2.16	**2.20**	1.88
F.W. Myers Group	2.08	2.00	2.00	2.00	**2.10**
Fritz Air Freight	**2.25**	2.07	**2.19**	**2.18**	**2.19**
Kintetsu World Express	**2.28**	**2.13**	**2.22**	**2.25**	**2.22**
Kuehne & Nagle	2.12	2.00	2.06	2.09	1.94
Lynden Air Freight	2.12	**2.12**	2.06	**2.24**	**2.12**
MSAS Cargo International	**2.26**	**2.12**	**2.19**	2.07	1.96
Nippon Express	**2.31**	2.11	**2.33**	**2.24**	**2.21**
Panalpina	2.00	**2.15**	**2.22**	2.07	2.00
Pilot Air Freight	**2.35**	**2.19**	**2.19**	2.09	**2.14**
LEP Profit International	2.17	**2.13**	2.11	**2.17**	**2.13**
Right-O-Way, Inc.	2.19	**2.33**	2.14	**2.33**	**2.29**
Schenkers International	2.15	2.04	**2.20**	2.07	2.04
Seko Air Freight	**2.25**	**2.21**	2.00	**2.18**	2.04
Skyway Freight Systems	2.00	1.83	**2.25**	2.08	2.08
Surfair	2.15	**2.15**	2.10	**2.20**	**2.10**
Target Air Freight	2.20	**2.20**	2.00	2.10	**2.10**
UP Express Air	**2.53**	**2.20**	**2.33**	**2.20**	2.07

** Averages calculated on basis of data for all carriers in category, not just those listed. Scores at or above average appear in boldface.*

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Quality in Ocean Service

Steamship Lines

Ocean carriers received good scores from shippers in all performance categories. Shippers' satisfaction was supported by their comments about ocean carrier quality.

"Our ocean carrier has an overall commitment to the quality process from senior management on down," says J.H. Chaney, manager, international transportation for Monsanto Chemical Co. in St. Louis.

However, ocean shippers also seem to be more price sensitive than shippers using other modes.

"Our primary carrier provides consistent, competitive service and quality equipment on various trade lanes," says Cheyenne Miranda, import traffic supervisor for ComSource Independent Foodservice Co. in Atlanta. "I am less satisfied with its high costs and pricing inflexibility."

Full containerload shippers gave ocean shippers the highest marks.

"Our carrier has unsurpassed transit times from the Far East and Southeast Asia to Oakland," says Greg Zitzer, import traffic manager for Willitts Designs in Petaluma, Calif.

Several large shippers even singled out certain carriers as having a beneficial effect on U.S. trade. "One U.S.-flag carrier we deal with not only provides consistent sailings and sufficient equipment, but it makes a special effort to keep American companies competitive in Asian markets," says J.C. Hirst, vice president-traffic for Alliance International in Palos Park, Ill.

Smaller shippers focused their comments on the carrier's ability to handle all sizes of shipments. "We receive good service from our ocean carrier on both containerload and LCL shipments," says Clem Baumeister, traffic manager for Things Remembered in Highland Heights, Ohio.

Many shippers say they need ocean carriers that can provide more than port-to-port service. They increasingly need their ocean carriers to handle the inland movements as well as the water transport.

"One of the most valuable services our carrier provides is to move containerload and LCL shipments smoothly beyond the terminal," says Gerald Clemens, supervisor/warehouse manager for Nevada Western, a subsidiary of Thomas & Betts Corp. in Sunnyvale, Calif.

"Our primary carrier provides excellent service to the Midwest, including store-door delivery," says Wayne Halverson, marketing manager for Wood Products International in Portland, Ore.

While shippers said their forwarders generally handle the details of ocean shipments, they were appreciative of carriers that provided customer service for them.

"Our ocean carrier to Australia has customer service focused on the customer," says Peter Freeman, president of Freeman, Inc. in Seal Beach, Calif. "They make everyone feel like a VIP, and they get the cargo there on time, with no exceptions."

STEAMSHIP LINES

	On-Time Performance	Value	Equipment & Operations	Customer Service	Sales Staff
AVERAGE*	***2.20***	***2.19***	***2.25***	***2.15***	***2.07***
American President Lines	***2.57***	***2.22***	***2.59***	***2.39***	***2.26***
Columbus Line	*2.10*	*2.10*	*2.10*	***2.20***	*2.00*
Crowley Maritime TMT	***2.45***	***2.45***	***2.64***	***2.45***	***2.45***
Evergreen Lines	*2.19*	***2.25***	*2.00*	*1.94*	*1.75*
Hanjin Container Lines	*2.18*	***2.27***	*2.18*	*1.91*	*1.64*
Hapag-Lloyd	***2.38***	*2.13*	*2.19*	***2.31***	***2.25***
K Line	***2.33***	***2.27***	*2.20*	***2.27***	***2.13***
Lykes Line	***2.30***	***2.30***	*2.10*	*2.00*	***2.20***
Maersk Line	***2.66***	***2.41***	***2.46***	***2.45***	***2.24***
Mexican Line	*2.00*	*2.00*	*2.00*	*1.00*	*1.00*
Mitsui O.S.K. Line	***2.42***	*2.17*	***2.25***	*2.08*	***2.17***
NYK Line	***2.40***	*2.40*	*2.40*	*2.30*	*2.00*
Nedlloyd Lines	*2.18*	*2.18*	***2.27***	***2.36***	***2.36***
Neptune Orient Lines	***2.33***	***2.33***	***2.25***	***2.25***	***2.42***
OOCL	***2.30***	***2.30***	***2.25***	***2.21***	***2.15***
Sea-Land Service	***2.52***	***2.19***	***2.52***	***2.33***	***2.22***

* *Averages calculated on basis of data for all carriers in category, not just those listed.*
Scores at or above average appear in boldface.

IT'S BACK TO BASICS FOR CARRIER QUALITY

Report cards on carrier quality reveal that shippers really want the basics done well. All the other bells and whistles count for extra credit.

Satellite tracking, computer diskettes, detailed freight flow reports, EDI interfaces—all are viewed as useful features by shippers, but none rates very high when shippers measure carrier quality.

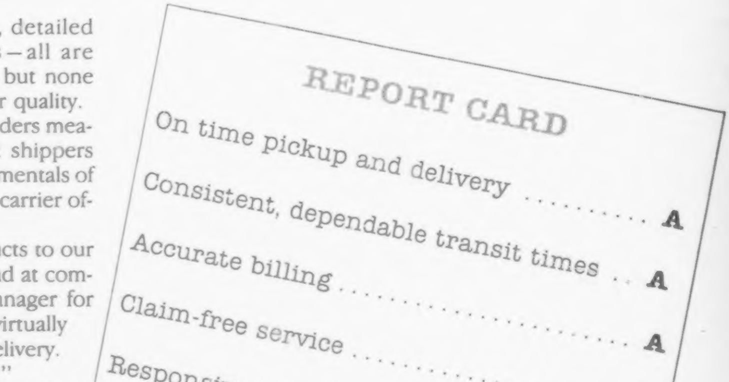
A five-part survey of how DISTRIBUTION readers measure their carriers' quality clearly shows that shippers simply want their carriers to perform the fundamentals of freight transportation well. Everything else the carrier offers counts for extra credit.

"Our primary LTL carrier delivers our products to our customers on time, without loss or damage and at competitive rates," says James J. Paule, traffic manager for Spangler Candy Co. in Bryan, Ohio. "We have virtually claim-free service and 99.5 percent on-time delivery. That's what I want and that's what I measure."

Hundreds of shippers responding to five DISTRIBUTION "Quality Polls" agreed with Paule, and it did not seem to matter which mode of transportation shippers were measuring. Whether the subject was motor carriers, railroads, airfreight companies or ocean carriers, the answers were similar.

While our series of quality polls indicates that shippers are focusing on the basics, it also shows that they are becoming extremely diligent about measuring carrier quality. More than half of the shippers responding to our surveys said they had developed formal quality measurement programs for the specific modes of transportation they use. Virtually all of these programs also included recognition programs for the carriers that met the shipper's criteria for quality service.

For shippers who do not yet have a formal carrier quality process, we invite them to crib from what their fellow shippers reported. For those shippers that already have a quality process, the responses on the following pages should be a good benchmark to see how their efforts measure up.



REPORT CARD

On time pickup and delivery .... A
Consistent, dependable transit times .. A
Accurate billing .... A
Claim-free service .... A
Responsive to problems & inquiries ... A
Ability to trace shipments .... A
EDI capability .... A
Competitive rates .... A

Final grade: Q

To Excel In LTL, Master The Basics

Carriers are responding to the "back to basics" movement among shippers, but the 'people' side of the business continues to be a challenge.

Shippers are measuring their LTL carriers like never before. More than half of the respondents to our LTL Quality Poll have formal quality measurement processes in place.

What are shippers measuring? You guessed it: the basics. Pickup and delivery performance is the number one criteria in the majority of shipper processes, whether they are formal or informal. Other criteria include competitive rates and good shipment tracing. Generally, shippers feel their LTL carriers are doing a good job in these areas.

"We have an excellent relationship with the staff of Viking Freight System," says John Rekart, shipping supervisor with Delta Engineering & Manufacturing in Tualatin, Ore. "We get simplified billing and responsive pickup and delivery schedules. We were able to service a major customer on a demanding project because of Viking's service."

David Monteith, purchasing director for C.A. Short Co. in Shelby, N.C. says Carolina Freight offers his company the best, most consistent transit times. "When normal transit times are not satisfactory, Carolina exhibits the ability to cut transit times to meet our special needs," he says.

"Tracing shipments and getting freight rates is easy with Roadway's '800' computer voice system," says Janette Carnithan, traffic manager for Superior Barbell, Inc. in Milan, Ill.

"I never have to make a second call to ABF for a pickup, trace or answer to a question," says Craig Freyer, Sr., shipping & traffic manager, Business Products, Stratford, Conn. "They always deliver on time and I've never had to place a claim for damages."

Claims is one area that LTL carriers need improvement on, shippers say. Claim-free shipping is another basic need for shippers, and they recognize carriers that excel in this category. "Since Conway Southwest Express opened their doors in Texarkana, we have used them for hundreds of inbound shipments with absolutely no claims or late deliveries," says R. Bates, a buyer for Brown Root USA in Ashdown, Ark.

"We have had zero claims in over two years and 2,000 shipments with Averitt Express," adds W.T. Deel, national director of distribution for Orlove in Ft. Lauderdale, Fla.

LTL carriers also need to improve in the "people" end of the business, shippers say. This includes resolving problems and developing staff and sales people who are knowledgeable about the shipper's business and are anxious to help customers meet their logistics objectives.

"With Roadway, we get the same high level of service from drivers, dispatchers, customer service and sales reps at our local terminal as well as every other terminal we deal with," offers Janice Wallace, traffic/billing coordinator for Goldblatt Tool Co. in Kansas City, Kan.

"Carolina provides us with an annual price quote, which enables us to properly establish our costs for the year at that time," says C.A. Short's David Monteith.

"From as far away as Mobile, Ala. Conway Southwest Express provides overnight delivery," says R. Bates of Brown Root USA in Ashdown, Ark. "This has saved us thousands of dollars on shipments that would otherwise have to go by airfreight."

Shippers with formal truckload quality measurement programs:

Yes: 65% No: 35%

Top five items measured by formal quality programs (in order of importance):

1. On time pickup and delivery
2. Consistent transit times
3. Availability of quality equipment
4. Competitive rates and contract prices
5. Accurate billing

Five TL carriers most often recognized in formal quality programs (in alphabetical order):

Burlington Motor Carriers
J.B. Hunt
M.S. Carriers
Schneider National
Swift Transportation

Top five items measured by all TL shippers (in order of importance):

1. On time pickup and delivery
2. Consistent transit times
3. Willingness to negotiate
4. Competitive rates and contract prices
5. Availability of quality equipment

Five TL companies mentioned most often as "outstanding" by shippers (in alphabetical order):

Burlington Motor Carriers
Crete Carriers
M.S. Carriers
Schneider National
Swift Transportation

Three things TL carriers do best:

1. On time pickup and delivery
2. Consistent transit times
3. Competitive rates and contract prices

Three things TL carriers need the most improvement on:

1. Availability of quality equipment
2. On time pickup and delivery
3. Ease of problem resolution

TL Shippers Focus On ABCs

They sit up and take notice when carriers go out of their way for them, but what really impresses TL shippers is dependability day in and day out.

Truckload shippers, regardless of whether they have formal quality processes or not—and two-thirds of those who responded to our survey do—seem to value the same qualities in their truckload carriers. These qualities can best be described as "the basics": on-time pickup and delivery, consistent, dependable transit times and equipment, accurate billing and the competitiveness of rates and contract prices are the key factors in both formal and informal programs for measuring truckload carrier quality. Shippers also said it was important to them that a truckload carrier be willing to negotiate. The survey indicates that most shippers believe their truckload carriers do the basics well at competitive rates.

"C.R. England has always maintained a high level of service with us. Its on-time delivery, timely pickups, correct billing and competitive rate levels rank extremely high with our company," says James Paule, traffic manager, Spangler Candy Co., Bryan, Ohio.

Yet a large number of shippers also feel that the timeliness of their TL carriers' pickup and delivery operations needs improvement. Shippers also agreed that quality equipment isn't always available, and that problems aren't always resolved as easily as they could be. Exceptional performance in these areas almost always catches a shippers' eye.

"Swift Transportation has all types of equipment and is extremely responsive to our needs, including delivering product on Sundays and holidays," says Ed Zachman, distribution center manager for Silo, Inc. in Phoenix. Shippers definitely notice when carriers go "above and beyond" to provide quality service.

"Wiegandbutton Motor Express negotiates competitive rates and consistently gives superior service," says Amy Earhart, distribution manager for LA Stocktab in Santa Fe Springs, Calif. "They will arrive early or late in the day as I require and meet delivery appointments at the other end. They are a picture of dependability."

Carriers also seem to be doing a better job of determining shippers' specific needs and positioning their service to meet them. The payoff can be handsome for carriers that are willing to make the effort.

"Schneider National has taken the time to find out what our needs are and then they spent the resources to satisfy those needs," says Tim Poole, corporate traffic manager for U.S. Marine in Everett, Wash. "Our partnership is now in its sixth year and is worth about $1 million annually."

It also appears that shippers are working to make their carriers part of an integrated supply chain. "We set up a program with Leprino Transportation to pool truck shipments from three different Procter & Gamble plants," says Brian Smolenyak, traffic coordinator for Safeway, Inc. "Inventory turns are corrected, inventory is down and the buyer has been happy for two years. They made me a hero."

Shippers named scores of individual truckload carriers as those recognized in formal programs or as outstanding performers. Though the ranks included many regional carriers, the carriers mentioned most often were large, nationwide fleets with high shipper visibility.

Shippers with formal LTL quality measurement programs:

Yes: 53% No: 47%

Top five items measured by formal quality programs (in order of importance):

1. On time pickup and delivery
2. Competitive rates
3. Dependable schedules and transit times
4. Claims-free service
5. Fast, accurate tracing

Five LTL carriers most often recognized in formal quality programs (in alphabetical order):

ABF Freight System
Consolidated Freightways
Preston Trucking
Roadway Express
Yellow Freight

Top five items measured by all LTL shippers (in order of importance):

1. On time pickup and delivery
2. Dependable schedules and transit times
3. Competitive rates
4. Claims-free service
5. Value of service regardless of price

Five LTL companies mentioned most often as "outstanding" by shippers (in alphabetical order):

ABF Freight System
Carolina Freight Carriers
Consolidated Freightways
Roadway Express
Yellow Freight

Three things that LTL carriers do best:

1. On time pickup and delivery
2. Competitive rates
3. Fast, accurate tracing

Three things LTL carriers need the most improvement on:

1. Ease of problem resolution
2. Claims-free service
3. Knowledgeable, helpful staff and sales people

Air Shippers Prize Flexibility

Two questions shippers ask of airfreight carriers: Do they go where I go? Do they take all types of freight? So far, integrators have the right answers.

Shippers have some unique quality measurements for airfreight companies that go beyond basic service criteria such as dependability of transit times, timeliness of door-to-door service and competitive rates.

Geographic coverage is one such measurement. "Kintetsu World Express has great rates and good service to our most important export markets," says Jeffrey Neal, traffic manager for Rahn Granite Surface Plate Co. in Englewood, Ohio.

The ability to accept all sizes of freight is another important consideration for shippers. "Pilot Air Freight handles a wide variety of my airfreight, from small samples to large shipments," says Dagmar Kuhlmann, senior international account representative at Emerson Motor Division in St. Louis. "Every shipment receives the same knowledgeable, dependable service, from pickup to excellent rates to great service to follow-up calls with routing information. It's a pleasure doing business with them."

The airfreight companies shippers recognized in their formal quality programs were most often integrated carriers. "Federal Express stands out because of its ability to deliver packages by 8 a.m.," says James Ball, traffic manager for Sauces Unlimited in San Antonio, Texas. "We were waiting for a part and couldn't start production without it. Federal Express delivered."

"Federal Express gives consistent on-time service and national discount rates. It also has a low claims ratio and the best tracing/customer service operation in the industry," adds Robert Wilson, senior traffic administrator for Loral Aerospace Corp., San Jose, Calif.

Other traits shippers appreciate in these carriers are flexibility and willingness to go the extra mile. "Our local Emery office doesn't care what the '800' number people say about 'We don't pick up after such and such a time,' " says R.W. Harker, material manager at Helicomb International in Tulsa, Okla. "They try to pick up when we get the part finished and make their plane."

Those airfreight companies mentioned as outstanding by all shippers included traditional forwarders. "Danzas' extensive worldwide network serves my growing international transport needs," says Curtis Howe, traffic coordinator for CNS, Inc. in Eden Prairie, Minn. "They give responsive service at competitive rates."

"Union Pacific ExpressAir always has the right answers to our questions," says Clint Cleever, owner of Florida Relocations in Tampa. "They have the best service, the most knowledgeable salesmen and the best tracking system."

Only a few shippers mentioned combination passenger/cargo airlines, reflecting the fact that shippers have less direct contact with these carriers, dealing instead through airfreight forwarders. One exception is American Airlines, which continues to retail its domestic freight services to shippers. "American Airlines continues to improve its operations, including the quality of its handling and its flight schedules," says John Myers, transportation support, GTE, DFW Airport, Dallas. "They have gone out of their way to handle large items that other carriers can't."

Shippers with formal airfreight quality measurement programs:

Yes: 49% No: 51%

Top five items measured by formal quality programs (in order of importance):

1. Consistent, dependable schedules & transit times
2. Competitive rates and prices
3. Door-to-door pickup and delivery
4. Broad geographic coverage
5. Ease of problem resolution

Five airfreight companies most often recognized in formal quality programs (in alphabetical order):

Airborne Express
Burlington Air Express
Emery Worldwide
Federal Express
United Parcel Service

Top five items measured by all airfreight shippers (in order of importance):

1. Consistent, dependable schedules & transit times
2. Door-to-door pickup & delivery
3. Competitive rates & services
4. Ease of problem resolution
5. Accepts all sizes of freight

Five airfreight companies mentioned most often as "outstanding" by shippers (in alphabetical order):

Burlington Air Express
Emery Worldwide
Federal Express
Pilot Air Freight
Seko Air Freight

Three things air carriers and forwarders do best:

1. On time door-to-door pickup and delivery
2. Broad geographic coverage
3. Consistent schedules & transit times

Three things air carriers and forwarders need the most improvement on:

1. Ease of problem resolution
2. Accept freight of all sizes
3. Knowledgeable sales people

Railroads Focus On Marketing

As truck competition heats up, railroads are becoming more responsive to shipper requirements. Still, there's work to be done on the basics.

About half of the rail shippers responding to our survey have formal quality processes in place to measure their carriers. As in other modes of transportation, these processes are dominated by measurement of the basics: service, price and equipment. The results were much the same for shippers without formal programs.

Shippers seem generally satisfied with the rates they pay for rail service. Rates are competitive and the railroads are willing to negotiate. It would be surprising, frankly, if this were not the case: average rail rates remain below 1980 levels (see *Logistics Annual Report*, July 1991, p. 52).

"Santa Fe Railway has recently become extremely aggressive in the pricing area," says E.F.X. Gronboldt, transportation specialist for Mobil Oil Corp. in Richmond, Va. "This carrier has turned itself around."

Another positive development mentioned by many shippers is the quality of the railroads' tracing capabilities. Apparently, new technologies employed by the railroads to manage their fleets, such as '800' numbers that shippers can dial up to check the status of shipments, are being well received. Several respondents also raved about the railroads' double-stack container services, and it appears that railroads are finding more applications — and shipping lanes — for domestic containers.

However, shippers think rail carriers have to do a better job with service basics such as transit times and availability of quality equipment. Also, shippers perceive that rail sales and support people need to be more helpful and improve their knowledge of the shipper's requirements.

Some railroads seem to be making strides in this area already. Many railroads have begun to step up their development of marketing programs tailored to a specific set of customer requirements. "An example of Burlington Northern's innovative marketing and customer service is its 'Doorstep Delivery' boxcar/truck bimodal service for food products," says Paul Richmond, distribution & transportation manager, Nugget Distributors, Inc., Stockton, Calif.

The major Class I railroads generally received high marks from shippers and were named most often either as carriers recognized in formal quality programs or as providing outstanding service to shippers using less formal quality measurements.

"Norfolk Southern has consistent transit times, superior equipment and they are willing to negotiate," offers Robert Holesapple, transportation supervisor for the Reed Minerals Division of Harsco Corp. in Highland, Ind.

"The attitude of the people at The Southern Pacific's Denver & Rio Grande Western division is customer oriented," reports Dennis Webber, logistics supervisor at Interstate Brick Co. in West Jordan, Vt. "They make double switches upon request, do switches at desired times and negotiate good rates."

Rail shippers, like those in other modes, appreciate it when carriers extend a helping hand, whether it's to cut costs or to meet specific logistics objectives. For example, one shipper cites an innovative dunnage concept that Southern Pacific Railroad came up with that helped him reduce his dependence on dunnage-free boxcar equipment.

Shippers with formal rail carrier quality measurement programs:

Yes: 49% No: 51%

Top five items measured by formal quality programs (in order of importance):

1. Consistent, dependable schedules & transit times
2. Competitive rates and contract prices
3. Availability of quality equipment
4. Fast, accurate tracing
5. Willingness to negotiate

Five railroads most often recognized in formal quality programs (in alphabetical order):

Atchison, Topeka & Santa Fe
Burlington Northern
Conrail
CSX Transportation
Union Pacific

Top five items measured by all rail shippers (in order of importance):

1. Consistent, dependable schedules & transit times
2. Competitive rates and contract prices
3. Availability of quality equipment
4. Direct routing
5. Knowledgeable, helpful staff and sales people

Five railroads mentioned most often as "outstanding" by shippers (in alphabetical order):

Atchison, Topeka & Santa Fe
Burlington Northern
Conrail
Southern Pacific
Union Pacific

Three things that rail carriers do best:

1. Competitive rates and prices
2. Fast, accurate tracing
3. Willingness to negotiate

Three things that rail carriers need the most improvement on:

1. Consistent, dependable transit times
2. Availability of quality equipment
3. Knowledgeable, helpful staff and sales people

Intermodal's On The Right Track

Shippers continue to be ambivalent about intermodal as measured against truck service. But it's clear that progress is being made on key issues.

Shippers compare intermodal directly against truckload service. All shippers in the survey ranked intermodal carriers' ability to offer transit times competitive with truck service as the most important measurement criteria.

There is little consensus as to how carriers stack up on this score. About half the shippers surveyed were satisfied with the transit times of their intermodal carriers, but just as many felt their transit times did not compare well with truck service. Shippers were equally ambivalent about another important intermodal performance criteria—the quality of the equipment used to provide the service. While many shippers believed the availability of quality equipment was good, just as many felt intermodal companies needed to take steps to improve the pool of quality intermodal equipment.

It's no surprise that intermodal is a price-driven mode of transportation for most shippers. In formal quality programs, shippers put the most emphasis on rates and prices. All shippers surveyed ranked competitiveness of rates and prices number two in terms of the criteria they use to measure carriers.

"With the increase in truck costs, BN America has enabled me to maintain my budget and still have good service," says Brian Smolenyak, traffic coordinator for Safeway, Inc. in Clackamas, Ore.

It was evident from our poll that shippers are acutely aware of the service quality provided by the draymen who pick up and deliver their shipments. Most agree that the responsiveness of this link, traditionally intermodal's weakest, needs improving. But several carriers appear to be doing a good job of tying together the front and back ends of their intermodal operations, and these companies stand out to shippers.

"Quantum, the J.B. Hunt-Santa Fe combo, provides consistent third-day Chicago to L.A. delivery—to the consignee, not just the destination ramp," says John Bult, catalog traffic manager for Amway Corp., Ada, Mich. "Here is an intermodal system with premium cartage and coordination on par with the already impressive rail portion. Quantum trailers are hustled out of the ATSF yard like they have their own private gate."

"Norfolk Southern's Triple Crown service has never accepted a shipment it couldn't cover," adds James Paule, traffic manager for Spangler Candy Co. in Bryan, Ohio. "Transit times are excellent and both origin and destination drayage are good."

One area that shippers have long viewed as a barrier to increased use of intermodal is the lack of single vendor responsibility for intermodal shipments. Now, however, carriers seem to be getting serious about putting together service packages that truly make intermodal transparent *vis a vis* truck transportation. Single carrier, door-to-door responsibility makes that possible, and shippers are glad to see carriers making progress in this area.

Shippers mentioned relatively few intermodal companies either as those recognized in their formal quality programs or as companies they generally feel offer outstanding service. Fewer than a dozen large, well-known companies dominated the list of carriers mentioned by shippers.

Shippers with formal intermodal quality measurement programs:

Yes: 51% No: 49%

Top five items measured by formal quality programs (in order of importance):

1. Competitive rates and contract prices
2. Transit times competitive with truck
3. Availability of quality equipment
4. Responsiveness of draymen
5. Single-vendor responsibility

Five intermodal companies most often recognized in formal quality programs (in alphabetical order):

American President Distribution Services
Alliance Shippers
BN America
Hub Group
Quantum (Santa Fe/J.B. Hunt)

Top five items measured by all intermodal shippers (in order of importance):

1. Transit times competitive with truck
2. Competitive rates and contract prices
3. Single-vendor responsibility
4. Responsiveness of draymen
5. Scope of service area

Five intermodal companies mentioned most often as "outstanding" by shippers (in alphabetical order):

American President Distribution Services
C. H. Robinson
Hub Group
Quantum(Santa Fe/J.B. Hunt)
Triple Crown (Norfolk Southern)

Three things intermodal companies do best:

1. Single-vendor responsibility
2. Transit times competitive with truck
3. Availability of quality equipment

Three things intermodal companies need the most improvement on:

1. Transit times competitive with truck
2. Responsiveness of draymen
3. Availability of quality equipment

Ocean Quality Poll

Ocean Shippers Say Price is King

Perhaps more than in any other mode, shipper perceptions of ocean carrier quality depend on the almighty rate.

Nearly two-thirds of ocean shippers responding to our poll said their company has a formal program to measure the quality of ocean carriers they use. Only truckload shippers boasted as many formal processes in place.

Perhaps less surprising is what these programs measure. Shippers with formal quality programs ranked price as the number two consideration in choosing an ocean carrier, while willingness to take independent action—to deviate from rates set by the conference—was right behind in third. Furthermore, shippers were generally dissatisfied with carrier performance in these two areas. This suggests that carriers may have succeeded in getting rate increases to stick and in exerting more discipline when it comes to staying within conference rate structures.

Still, shippers appreciate it when carriers help them look good, whether through competitive rates, quality service, or both. "Hanjin helped me reduce import costs by 30 percent in 1990," offers Don Yaxley, manager of international distribution at Itek Graphix Corp. in Rochester, N.Y. "They have performed excellently and cost effectively."

While good rates are important, the carrier's responsiveness when asked for a quote can also affect shipper perceptions of quality performance. "You can set your watch by Maersk's on-time responsiveness on rate matters," says C.J. Wenthen, manager-international traffic for Witco Corp. in New York.

On the service side, the primary quality measures were adequate numbers of sailings and dependable transit times. Availability of the right containers and other equipment and the knowledge possessed by carrier sales staffs also ranked high.

"Jugolinija's rates are very good, and they've always provided good equipment and sailings," says Collette Ferner, export traffic manager with WCI International of Pittsburgh, Pa. "Their sales people know how to get things done."

"Cast will do whatever it takes to get good rates and equipment availability," adds Randy Sharp, export manager for Scarbrough International of Kansas City, Mo. "My sales rep always goes the extra mile to get the job done." Shippers also expect single-carrier, door-to-door service on a through bill of lading and, for the most part, appear satisfied with carrier performance in this area.

Another trend confirmed by the poll is that the fortunes of ocean carriers are increasingly linked to their landside operations. Shipper perceptions of service do not end when containers are offloaded at the destination port. Good intermodal connections keep the freight moving, and that is becoming more and more important to shippers.

"NYK gives us the customer service we need on the import side, and the domestic stack train turnaround we require," says Al Giunchi, corporate traffic manager for Hartz Mountain Corp., Harrison, N.J.

The ocean carriers recognized most often by shippers in quality programs or mentioned most often as outstanding were the world's largest container carriers. These carriers typically offer the most comprehensive schedules and are able to invest in both good equipment and landside operations.

Shippers with ocean carrier quality measurement programs:

Yes: 61% No: 39%

Top five items measured by formal quality programs (in order of importance):

1. Adequate sailings and dependable transit times
2. Competitive rates and contract prices
3. Willingness to take independent action
4. Knowledgeable, helpful staff
5. Availability of equipment

Five ocean carriers most often recognized in formal quality programs (in alphabetical order):

American President Lines
Evergreen Line
Maersk Line
NYK Line
Sea-Land Service

Top five items measured by all ocean shippers (in order of importance):

1. Competitive rates and contract prices
2. Adequate sailings and dependable transit times
3. Single carrier door-to-door responsibility
4. Knowledgeable, helpful staff and sales people
5. Availability of equipment

Five ocean carriers mentioned most often as "outstanding" by shippers (in alphabetical order):

American President Lines
Hapag Lloyd
Maersk Line
OOCL (USA)
Sea-Land Service

Three things ocean carriers and forwarders do best:

1. Adequate sailings and dependable transit times
2. Single carrier door-to-door responsibility
3. Knowledgeable, helpful staff and sales people

Three things ocean carriers and forwarders need the most improvement on:

1. Willingness to take independent action
2. Knowledgeable, helpful staff and sales people
3. Competitive rates and contract prices

THE STATE OF QUALITY IN LOGISTICS

Logistics quality processes have been described as "immature," but these profiles of shipper and carrier quality efforts show that the movement has indeed taken hold.

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ABF

This LTL carrier began its quality process in the early 1980s as a way of propelling its organization into a deregulation mindset.

Several years ago, ABF was contacted by a company that had heard about the carrier's quality process. This manufacturer of playground equipment used a private fleet to haul LTL shipments of its product. But delivering the equipment was tricky; it has lots of pieces, and it's easy to mix them up or forget one. Consignees include playgrounds or parks where there usually are no receiving docks or experienced receiving personnel.

Finally, the company came to ABF and said it wanted out of the private fleet business. After training its drivers to handle the freight and to meticulously check the pieces themselves, ABF took over the business, and eventually began outperforming the private fleet.

But the carrier wasn't satisfied. So it sent teams of people out to breakbulk terminals to train dock workers on proper loading and inspection procedures for the freight. ABF began using bar codes to ensure that the right pieces were on the right truck. It developed a label for each piece that contained ABF's pro number and the destination terminal code. ABF now has done business with this customer continuously for five years and is the company's exclusive carrier.

ABF attributes its success with customers like this one to a quality process it put in place nearly a decade ago, when 3M Co. gave a quality seminar for vendors and carriers. "They realized the carrier was the link to their customers," says David Stubblefield, ABF's vice president of marketing. He saw that the quality process could change ABF's culture.

Atlanta
Quality people providing Quality service

"We needed to get away from the regulation mindset, and this was a vehicle to do that," he says.

Now, the carrier's mindset is focused on ideas like constant improvement. Before it began handling the playground equipment, ABF had to project what the cost would be. That's hard to do unless you've actually handled the freight. Once it began moving the stuff, those cost projections had to be altered. As a result, ABF worked with the shipper to change some loading procedures so that more shipments could fit in a trailer. That spirit is the key to the quality process, Stubblefield believes. "We get to the root of the problem, the cause of why we can't satisfy the needs of our customer, and we fix it once," he says. "Sometimes you have to take non-traditional steps to do that. The answer isn't to raise the price, the answer is to look at the logistics train from start to finish and eliminate handling and time in the cycle."

—Jay Gordon

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Conrail

The railroad's hazmat quality award is part of a "concerted effort within the industry to do the job better."

Conrail has turned the tables on its customers by awarding *them* for the safe movement of hazardous materials.

Fourteen shippers won Conrail's transportation quality award this year. Each tendered at least 1,000 carloads of hazardous materials to the railroad last year without causing a single leak or spill.

According to George Turner, assistant vice president of petrochemicals and minerals, Conrail is the first railroad to hand out quality awards to major shippers, instead of the other way around. He says the three-year-old program represents a more cooperative approach to the movement of hazardous materials.

"We'd gone through a lot of finger-pointing between railroads and the chemical and petroleum industries," Turner says. "Each said it was the other's problem." Now, though, Turner sees evidence of an industry-wide change in attitude. "There's a concerted effort within the industry to do the job better," he says.

With a system covering nearly 13,000 miles in 14 states and the province of Quebec, Conrail has a special interest in ensuring safety on the rails. Compared with Class I railroads in the western U.S., it handles a lot more direct deliveries to end users. That raises the potential for what the carrier calls "non-accidental" releases – incidents caused by improper packaging or lax inspection of equipment.

"A number of companies decided to be serious about that," Turner says, "and we decided we ought to recognize them. We thought it would be nice for people on the loading docks to know that someone outside their companies appreciated what they were doing." He says Conrail has detected a "significant decrease" in safety incidents – fewer leaky car valves, unsecured dome lids, loose manway covers, worn gaskets and the like – in the three years since it began handing out the award.

The price of a slip-up can be severe. Anywhere from one to 200 gallons of product can be lost in a single incident, with the slightest leak forcing temporary evacuation of an entire community. "People are so attuned to chemicals these days that even water dripping from snow melt can be reported as a release," says Turner. "And you still have to go through the (safety) motions."

Conrail's zero-incident requirement stops many shippers from winning the award – and exposes the railroad to charges of unfairness. After all, large companies are statistically more likely to cause leaks, despite their best preventive efforts. Or are they? Replies Turner: "I had that argument from one big shipper. Another one that shipped even more attained the goal."

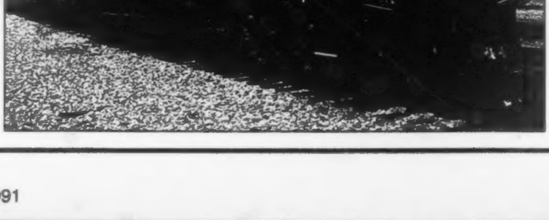
Four companies have won the Conrail award all three years: Amoco, B.F. Goodrich, Georgia Gulf, and Hoecsht Celanese Chemical Group. Liquid Carbonic, PPG Industries, and Shell Oil have won twice. First-time winners in 1990 were BASF, BP Oil & Chemical, Canadian Electrolytic Zinc, ICI Canada, Marsulex, Mobil Oil, and Texaco Chemical.

Conrail continues to implement its Continuous Quality Improvement (CQI) program throughout all levels of the organization. The railroad's motivation came from the increasingly strict requirements of its major shippers. "CQI is the price of admission to business these days," says Turner.

Even before the introduction of CQI, though, Conrail was improving its performance. In 1990, in 249,000 hazardous materials shipments, Conrail experienced only eight incidents that involved the release of product. Its reportable accident ratio was 3.23 per million train miles, compared with 9.54 in 1981.

Still, every railroad has to watch the bottom line. Shippers continue to demand low rates even as they call for tight quality and ever increasing service levels. There are plenty of truckers and other railroads ready to snap up the business if Conrail doesn't fulfill the customer's first criterion. "No matter what they say," Turner notes, "it's still price."

– Robert Bowman



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Consolidated Freightways

Consolidated Freightways has decentralized quality with the notion that ideas bubble up when trust seeps down.

For a large conglomerate like Consolidated Freightways, the key to achieving quality is the empowerment of workers. Not only strategic planners and salespeople, but the loaders and stackers as well. For quality to really take hold, there must be a dramatic shift in corporate culture and the way decentralized companies are managed.

"The trucking business lives on frail margins," explains CF's Vice President of Quality Gary Keenan. "We can no longer support layers of middle managers. The quality process is a way to bring decision making to the workers in the field." For management, the biggest challenge is trusting those workers to make the right decisions. "When the workers know that trust is seeping down," Keenan likes to say, "then pretty soon ideas start bubbling up."

How does a company of CF's size, with subsidiaries and divisions all over the nation, accomplish verifiable results with its quality crusade? It starts with a quality council, called CF EXCEL. It's mission is to not only ingrain quality in the various CF companies, but to spur a shift in focus from internal measurements to those based on customer satisfaction. The council sets the corporate quality agenda and oversees the education and training of all 22,000 CF employees.

The goal is to bring into the fold workers that have traditionally been left out of the planning process. To that end, Quality training for warehouse workers extends well beyond lapel pins and pep talks. It includes training with Pareto charts, fishboning, histograms and distribution of Corrective Action forms that encourage cause-and-effect reasoning, detailed explanations and precise communication. "We're trying to break the old stigma where workers in this business are paid for their strong backs, not their strong minds," Keenan says.

It's working. At CF's Dallas consolidation center, an EXCEL team reduced damaged and short freight by 34 percent during a nine-week pilot program in which freight handlers were "empowered" to load trucks as they saw fit—without interference from foremen. The load factor at that facility improved between 1,000 and 2,000 lbs. per trailer. A second pilot project is underway with a different team of stackers, to test whether it was the new method, or the workers themselves, that created the dramatic improvement. If the second test is as successful, the new methods will be rolled out to the entire dock operation.

Keenan admits this is a huge change from business-as-usual in the grittier echelons of American business. "The front line supervisor is the person who has the biggest transition to make in this new environment," he stresses. Because lower level workers assume more responsibility for their jobs, a front line supervisor is stripped of the standard fallback position: 'You do it the way I tell you because I'm the boss.'

However, Keenan stresses that empowerment of workers doesn't render their supervisors obsolete—it transforms them into something more important than a mere watchdog. "The supervisor is now responsible for improving training in the facility, sizing up the next job that's coming in, developing new ideas."

He admits this change in approach is no small feat. "It's a little easier to do in some of the smaller terminals, like Lufkin," he notes. That Texas facility was on the verge of losing a vital customer, Cooper Power Systems, because CF's typical double-stacking method, preferred by dock workers for its high load factor, was causing too much damage to Cooper's electrical transformers.

But Ray Paris, a worker at the CF consolidation center, suggested to Cooper officials that a rack of regular pallets be inserted between stacked cartons of porcelain resistors. The customer got more product protection, and CF maintained its dense load factor. Rather than reprimand Paris for deviating from standard practice, CF gave him "ownership" of all Cooper freight. As a result, CF is now getting about 75 percent of Cooper's Texas business.

—E.J. Muller

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American Airlines

Investing in automation spurs this airline's cargo quality process and helps it compete with the integrated carriers.

American Airlines solidified its commitment to cargo when AA Cargo became a separate operating division of the airline on January 1, 1991. The unit has a mandate to maximize service offerings and profit potential. Improving quality of service is now its top priority.

At the core of its effort is a $25 million automation system, providing shipment tracking throughout AA's network. Bar coding of freight has begun at 11 major terminals. The goal, says AA Cargo President William Boesch, "is to provide quality service in cargo that mirrors the high standards our passengers enjoy."

Boesch believes that bar code labels attached to AA freight are the essential first step in improved cargo management. "A box can't tell someone it's lost, present a passport, know what gate to go to, what aircraft to board, what seat to sit in or when to get off," he says. "We have to do all the thinking for cargo."

The brain that controls all that thinking is the Cargo Information Data Base, which manipulates all the daily information gleaned from AA's Cargo SABRE system. It tracks revenue figures, service performance, lane segment activity and terminal volume levels. The system is the centerpiece of daily executive meetings where problems are reviewed by specific service number; field stations are contacted and corrective action is taken. "A lot of other airlines look at quality from an internal standpoint," Boesch says. "We've designed this system to measure our performance from the customer's perspective. That may not be anything new for the integrated carriers, but it's a big change for airlines."

American Airlines Decision Technologies, an AMR Corp. subsidiary, is also at work on an automated cargo routing guide that will instantly analyze shipments to determine optimal routing based on factors such as passenger loads, available lift and weight restrictions.

While most of these processes will be transparent to shippers, one visible aspect of AA Cargo's operation is its issuance of Customer ID numbers. The ID number allows records to be kept for individual customers, allowing customers to track the number of shipments, freight dollars and service performance. To date 65 customers are using the system.

AMR's investment in the cargo business seems to be paying off. In the first quarter of this year the cargo division had revenues of $107.1 million, compared with $98.8 million for the first quarter of 1990, an 8.4 percent increase. This was accomplished at a time when cargo volumes for U.S. passenger lines, as well as some integrated carriers, declined by an average of 4.1 percent, according to the Air Transport Association. In the second quarter, freight revenue ton miles rose 4.8 percent to 198.7 million; the total for the year to date is 385.4 million, which compares favorably to 1990's midyear total of 364.6 million.

In the meantime, a new modernized cargo terminal has opened in Miami, hubs have been expanded in Chicago and Dallas, more flights have been added to the Caribbean, new routes to South America, Milan and Madrid are opening, Australia is in start-up, an additional flight to Japan has been added out of San Jose, service to London and the UK has been expanded, and a new series of MD-11 aircraft are being phased into service, each providing more international belly space than a 747-400.

This type of expansion should make AA popular with freight forwarders, who weren't thrilled when the airline began increasing its own retail sales efforts, primarily in the domestic market. "We are committed to freight forwarders on our international services," says Boesch.

While it develops closer ties with forwarders for its international business, AA continues its attempts to penetrate the domestic retail freight market and battle for high-yield express shipments with integrated carriers such as Federal Express, Airborne and UPS. "We don't want to challenge Federal Express as much as create an image for ourselves in those markets," Boesch says.

—E.J. Muller

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Columbus Line

An early success on the quality front under its belt, this carrier now must keep workers from becoming too narrowly focused.

For a carrier, it's a great accomplishment to be recognized by a customer as a "Quality" vendor. For an ocean carrier it's particularly rewarding, since the Quality doctrine has been slower to take hold in waterborne carriage than in its surface counterparts.

It must be doubly satisfying, then, to be honored for outstanding service before your formal Quality process is even in place. That's the case with Columbus Line, Inc., which this year has been cited by both Apple Computer and Uniroyal Goodrich Tire Co. (UGTC) for providing quality service, based on the two shippers' own measurements.

"We are now working on a formal quality process," says Columbus Line Vice President of Quality, Jan U. Stolzenburg. "It's nice to get off to a good start, knowing that you're already doing quality work."

Apple has been recognizing quality performance among its approximately 200 transportation vendors for the past six years. The German-flag carrier was one of only 18 transportation companies honored by the computer giant.

"We gave them our specifications," says Devis Fox, transportation analyst for Apple's Pacific division, "and they responded with a personalized quality process." According to Fox, that included frequent, fast transit from the U.S. West Coast to Australia/New Zealand (one of Columbus Line's major trade lanes), availability of good equipment, efficient destination handling, and a fair, stable price in a market notorious as one of the most volatile and expensive in the world.

Fox points out that Columbus Line's dependable service has enabled Apple to switch its primary shipping method from airfreight to seafreight. The cost savings, achieved without any drop in Apple's service commitment, "will be about 50 percent of airfreight in the long run," Fox notes.

UGTC uses Columbus Line to handle containerized shipments of tires from the East Coast to Australia/New Zealand. The company rates each of its carriers and forwarders quarterly, grading on service levels, billing accuracy and efficiency. Service standards include: equipment available as scheduled; space available for all booked cargo; consistent transit times; reliable on-time performance; prompt response to booking requests; effective problem solving, accurate rating of bills of lading and correct invoices. UGTC says Columbus Line's rating was the highest earned among ocean carriers.

It is interesting to note that Columbus Line's quality efforts will incorporate independent agencies that represent the line in various cities. In fact, Dick Jones, president of Jones Shipping in Pittsburgh, Pa., shared the UGTC award with Stolzenburg, since it is Jones' company, acting as Columbus Line's Ohio agent, that actually handles the UGTC account.

How does a shipping line control its quality efforts when it relies so heavily on agents? Columbus Line will be inviting top executives from its agencies to its quality workshops, to ensure that they have a fix on how Columbus Line wants to serve its customers. "I don't even like to use the word 'agent,' " says Stolzenburg. "We think of Jones, and other companies like it, as part of our total operation, even if its not a Columbus Line office—and they will be part of our overall quality process."

Stolzenburg admits that being truly customer-driven requires a complete change in corporate culture. U.S. business has made a serious error by training its workers to be too task-oriented, Stolzenburg says.

"Many top managers have been wrong for years because they train people to only do a certain job," he states. "They have not prepared people to be leaders." He wants the quality process to provide Columbus Line workers with a "zoom lens," allowing them to focus closely on an area of expertise—but also granting a wider perspective on interdepartmental and customer interaction. "In too many businesses," says Stolzenburg, "the workers' lenses are too narrowly focused."

—E.J. Muller

COLUMBUS LINE

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AT&T

AT&T has raised the stakes in its Quality process by introducing minimum performance "thresholds" for approved carriers.

Early in 1991, AT&T's national contract carriers gathered in Greensboro, N.C., for a "recognition" ceremony that served as a kind of benchmark for the company's new Transportation Quality Program (TQP). Everybody received an engraved acrylic wedge "in recognition for their contribution in getting the program going," says Angelo Gibilaro, senior transportation specialist. They also got a clear message: henceforth, every carrier would be expected to meet and exceed minimum standards in order to do business with AT&T.

These "thresholds" were set deliberately low at first. "We wanted to make sure that carriers aren't in the red from the very beginning," Gibilaro says. But standards will rise as the program matures. Moderately capable carriers won't be allowed to rest on their laurels.

Initial grades are *marginal, good, exceeds,* and *overall excellence*. Carriers below "marginal" will be placed on four months' probation, then kicked out of the program if they fail to improve. Marginal carriers also will have to improve. Eventually, Gibilaro says, the "good" classification will be eliminated. "Anyone performing below 'exceeds' is not really a satisfactory carrier," he says.

With the thresholds in place, AT&T contacts each carrier on a monthly or quarterly basis to let them know whether they're making the grade. It identifies specific problems at various shipping and receiving locations. Gibilaro says the program isn't a horse race where carriers are whipped to post faster transit times. Nor is AT&T obsessed with narrowing delivery windows to minutes. "We're concerned about consistency," he says.

As of mid-July, 43 trucking companies and 13 air carriers were in the program. Gibilaro says many carriers like knowing where they stand and how they might grab a bigger piece of AT&T's distribution business.

Originally, TQP measured carrier performance in four key areas: transit interval, loss and damage frequency, billing accuracy, and rates. The last item has been dropped from the equation because carriers can't make spot adjustments to national contracts. Instead, AT&T maintains a pricing index which is passed along to its routing departments. With price removed from the formula, other factors assume greater importance. Transit interval jumps from 50 to 70 points out of a possible total of 100. Loss and damage frequency is 15 points, and freight bill accuracy goes from 5 to 15 points.

AT&T plans on presenting its first-ever transportation quality awards to the top carrier in each of six categories: national truckload, regional truckload, national LTL, regional LTL, air cargo, and air express. If the best carrier in any category falls below "exceeds," no award will be given. In addition, the shipper will recognize all of the carriers that have reached the "overall excellence" category in the prior year. These are the vendors who can expect to be first in line when the next batch of contracts is signed.

With TQP still in the development stage, it's too early to quantify the program's impact on the company's bottom line, Gibilaro says. "But we have noticed a lot more attention paid by carriers. They're more concerned with such things as intervals, billing accuracy, loss and damage."

To grade carriers, AT&T must rely heavily on data supplied by the carriers themselves. Gibilaro says their information has proved to be timely and accurate—with discrepancies sometimes the fault of AT&T. An alleged late shipment, for example, might turn out to be caused by a delay in the filing of input data.

Some carriers initially were worried about the way in which AT&T calculates loss and damage claims. The figures are based on claims filed, not settled, so there's the possibility of an unfair score. (Exceeding a claims rate of 1 percent wins the carrier a big, fat zero.) But Gibilaro stresses that AT&T is willing to adjust for bad claims filings—assuming that the quality-minded shipper makes any.

—Robert Bowman

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Union Carbide

This is a kinder, gentler quality program. But don't get the wrong idea: recognition from this shipper doesn't come easy.

Some big shippers lay down the law in no uncertain terms: meet my standards, or take a walk. When it comes to recognizing quality carriers, these companies pick the top candidate in each category. It's a winner-take-all affair.

Union Carbide Corp. has a different approach. "It's not a Company A vs. Company B exercise," says Don A. Center, director of transportation, purchasing and services for Union Carbide Chemicals and Plastics Co. Inc. "If you can achieve the standards of Union Carbide, that's all we ask."

For the past five years, Union Carbide has had one of the chemical industry's most aggressive in-house Quality programs. Only recently has it begun to award suppliers for excellence. Center says it was a matter of extending internally developed standards and goals to outsiders. "We've acknowledged that positive recognition is important for our own people," he notes. "And we recognize that our success partially depends on our suppliers."

Union Carbide's 50 key carriers are measured against a dozen performance criteria, then placed in one of five categories: excellent (nearly always exceeds expectations), good (sometimes exceeds expectations), acceptable (meets requirements), poor (improvement needed), and unacceptable (performance consistently below requirements).

This summer, Union Carbide's first-ever Supplier Quality Awards were presented to a pair of ocean carriers: Independent Container Line of Richmond, Va., and Trailer Marine Transport of Jacksonville, Fla. They were the only two carriers of any mode to achieve the company's "excellent" rating.

Carriers are rated according to a wide range of objective and subjective criteria. In the first category are such factors as safety, on-time performance, customer complaints, documentation for international freight forwarders, loss and damage claims, billing accuracy, shipments accepted, and equipment suitability. Other elements are harder to quantify. These include the existence of a Quality process within the carrier's organization, management attitude, communications, EDI, pricing, responsiveness, tracing and shipment expediting.

To get a handle on these "soft" criteria, Union Carbide distributes a detailed questionnaire to internal traffic personnel. Carriers are rated by the Union Carbide managers with whom they deal on a daily basis.

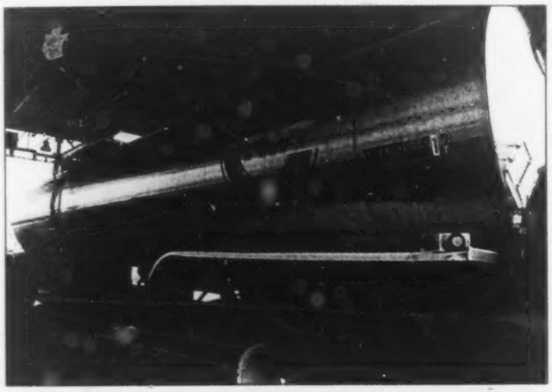
The criteria vary according to mode. For example, ocean-going bulk carriers are rated on the quality of their chartering agents and marine terminal management. Freight forwarders and customs brokers must meet certain standards on documentation and regulatory compliance.

Some hazardous materials shippers demand that all of their carriers make it through the year with zero safety incidents. Union Carbide is a little more flexible than that. The company has a formula that allows for the fact that large carriers are more likely to experience a certain number of problems by sheer virtue of the volumes they handle. While no leaks or spills are considered acceptable, they're viewed in context.

In the case of tank trucks, for example, Union Carbide recently announced its intention to vacuum-test every vehicle presented for loading in order to eliminate a problem with faulty valves. "One leak out of 15,000 trucks is simply not good enough," Center says.

Carriers that fall into the "poor" or "unacceptable" categories aren't automatically cut loose. They may perform well on specific points and remain eligible for business at certain locations. The only way to lose Union Carbide's business is to display no evidence of a commitment to change. Low grades have varying effects. In one case, says Center, a carrier did nothing to improve performance over a three-month period and was disqualified. But a second carrier went from "unacceptable" to nearly "excellent," boosting its share of Union Carbide's business at a particular location from 5 percent to 35 percent over three years.

—Robert Bowman



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StorageTek

Experiencing a Chapter 11 reorganization has given this shipper a new appreciation for its quality process.

Storage Technology Corp. emerged from Chapter 11 reorganization in 1987 with a stricter attitude toward internal quality—and equally high expectations of its carriers.

Today, Louisville, Colorado-based StorageTek keeps extensive report cards on all of its carriers, giving out annual awards for service excellence in five categories. A sixth award honors the year's "best of the best."

The origin of the awards program dates back to the early 1980s, before its 1984 Chapter 11 filing. After getting its financial house in order, StorageTek placed a greater reliance on rating carriers. Part of the reason, says Staff Traffic Administrator Kirk Sarell, is that the company wanted to recognize suppliers that had stuck with it during tough times. "If they hadn't," he says, "we would have been in a world of hurt."

The first step in a meaningful awards program for carriers is figuring out what kind of service carriers are providing. StorageTek was surprised by some answers; it seems that end users weren't always telling the shipper when deliveries were late. "Some carriers we thought were doing well weren't nearly as good," says Paul Puttkammer, traffic operations manager. "They talked a good game."

SUMMIT TRANSPORTATIO
SYSTEMS INC.
DENVER, CO

To recognize the best, StorageTek devised an elaborate report card in five carrier categories. The main points of the grading system are pretty much standard: transit time, loss and damage, overall customer service. But StorageTek incorporates those details into a formula that leaves little room for guesswork. Electronics van lines, for example, are scored on such items as late pickup or delivery (or late confirmation of same), contact with carrier in hours prior to pickup, unauthorized pickup of machines, number of helpers on the scene, damage to units, "shock watch" status report, invoicing and communication of problems. Van lines get five points for a late pickup/delivery ratio of 1 percent or less, four points for up to 1.5 percent, three points for up to 2.2 percent, two points for up to 3 percent, one point for up to 4 percent, and zero points for anything greater. The same system of graduated scoring applies in other categories.

Last year's award winners were Atlas Van Lines and its agent, Golden Van Lines (best padded van carrier), Bob Martin Trucking (best local carrier), Burlington Air Express (best nationwide carrier), Schenkers International (best specialized air/international carrier), and freight broker Summit Transportation (best truckload carrier, as well as best overall carrier of the year).

"Hard" data such as on-time delivery and transit times tend to get weighted more heavily, Sarell says. Feedback from personnel on the shipping dock is less easy to quantify, so it assumes a supporting role in the final score.

Performance reviews are conducted monthly for padded vans, quarterly for "spares" carriers. With a maximum possible points in each category, StorageTek considers such things as driver effectiveness, invoicing, timeliness of settling claims, and carrier creativity in response to special requests. With bonus points for things like non-standard moves and a flawless on-time record, top carriers can actually score in excess of 100 percent. Summit Transportation turned in a total of 106 percent for the year's fourth quarter. It won extra points for working with StorageTek on a variety of specialized inbound logistics programs.

The complex grading system helps to narrow the stable of acceptable suppliers. Presently, StorageTek relies on just three padded van lines and 12 spare parts carriers for up to 98 percent of its domestic and international shipping needs.

Puttkammer cautions against measuring too much—a real pitfall in the data-obsessed world of quality controllers. At StorageTek, priority goes to factors for which information is available. "Sometimes the administration of the program outweighs its value," he says. "We avoid the high cost of looking at everything all the time."

—Robert Bowman

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Dow Chemical

Carriers hoping for preferred supplier status from Dow had better start now. The process takes two years, and no one's come close yet.

Dow has been handing out rail safety awards for 16 years, but its broader quality program, relating to all aspects of carrier service, is barely out of the blocks. "We don't have a carrier who's close to meeting our criteria," says Senior Traffic Manager Conrad Romanick.

"You have to set standards high in the chemicals industry," Romanick explains. That's exactly what Dow has been doing since 1975 with its Rail Safety Achievement Award. This year's winners, Consolidated Rail Corp. and Norfolk Southern Corp., handled more than 8 million and 5 million Dow railcar miles, respectively—without any damage to the customer's freight or equipment.

Recently Dow tightened up the eligibility requirements for the rail safety award. In addition to being one of the company's top 10 railroads in terms of volume, a carrier now must move more than 3 million loaded railcar miles for Dow each year. The reason for the additional rule, Romanick says, is that Dow's three biggest rail carriers handle significantly more product than those at the bottom of the top 10.

Dow checks out eligible railroads in three areas:

- Number of safety incidents per million Dow railcar miles traveled;
- Reporting of incidents to Dow and CHEMTREC, the 24-hour information hotline of the Chemical Manufacturers Association, and;
- A comprehensive safety program that embraces employee training, equipment inspection, track maintenance, regulatory compliance and overall operating safety.

The winners usually make it through the year with no safety incidents at all. Romanick concedes that Dow's formula is unfair to the largest railroads, who are statistically more likely to have at least one incident over their vast systems in the course of a year.

In fact, Union Pacific, which handles 6,000 cars a month out of two Dow plants on the U.S. Gulf Coast, has never won the award despite an impressive safety record. Norfolk Southern, a smaller vendor, has won 11 times in the past 15 years. "We've never been able to figure out a way to overcome that," Romanick says.

For purposes of the safety award, any damage to the shipper's equipment counts against the carrier, whether it's a $400 handrail or a totaled railcar. Dow's total quality measurement program, on the other hand, distinguishes between major and minor damage. Also, such things as billing errors and on-time deliveries are factored into the equation.

These days there are so many carrier awards around that it's hard to tell them apart, but Romanick says Dow's suppliers haven't become *blase*. Rail safety winners receive the ubiquitous plaque along with a $3,000 scholarship check for the child of an operating employee to the college of his or her choice.

Dow's overall quality measurement tool tracks day-to-day performance and is potentially more valuable to carriers. Dow develops a monthly report card on which its traffic managers rely at contract time. "We use it so that business doesn't just go to the guy with the best money offer," Romanick says. He's quick to add that Dow considers the program a partnership with carriers—not a device by which the big shipper merely dictates terms.

Dow plans to award special plaques to all of its qualified and preferred carriers. But the latter designation won't be easy to achieve. A carrier must meet stringent safety standards over a period of about two years. It must answer 85 questions regarding its internal quality effort, management systems and safety training program. From this exhaustive questionnaire, the carrier derives a performance "grade" which is audited by Dow. Romanick says at least two major railroads are currently working to meet the criteria.

Dow's short-term goal is to spend half of its distribution dollars with qualified or preferred carriers by 1993. Romanick says the number will probably never reach 100 percent. "For smaller carriers, it may not be worth the effort," he says.

—Robert Bowman

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Texas Instruments

TI has deftly arranged its recognition program to keep carriers focused on quality service rather than on winning awards.

Winning a Texas Instruments "Supplier Excellence Award" is no mean feat. Last year, fewer than 100 of the 15,000 vendors that TI uses worldwide received the honor. Only five transportation companies found themselves among this select group .

The process is especially difficult for carriers, explains Dirk Wilken, TI's domestic traffic manager for semiconductors. "The only way a carrier can win this award is to have a champion among TI's 15 domestic and 20 international traffic managers who is willing to nominate and defend it through the review process," says Wilken.

After a carrier is recommended, the nominating traffic manager presents supporting data to the corporate traffic council. The data includes objective criteria such as on-time performance, claims record, cost-effectiveness, level of commitment (amount of freight dollars spent with the carrier) and length of the relationship between TI and the carrier. The council also considers subjective criteria such as the degree of sales support, the quality of computer systems and the ease of doing business.

"Any domestic traffic manager on the corporate traffic council can disqualify a candidate," says Wilken. If the carrier makes it through this stage, its name is passed on to the corporate procurement council, which includes purchasing managers that source components and buy services of all types from 15,000 vendors worldwide.

This group reviews the nomination and also consults with all of TI's overseas locations to make certain that no manager disagrees with the nomination of the carrier. Any one of the 20 overseas traffic managers can also disqualify a candidate. The corporate procurement council then selects the final winners.

Carriers that won the 1990 TI Supplier Excellence Award include Consolidated Freightways, North American Van Lines—High Value Products Division, Atlas Van Lines, Concordia International and Airborne Express.

The selection process is intentionally difficult, says Wilken. "We want the award to create a benchmark for other carriers," he says, "so we must establish high standards."

The standards for the award are a moving target—one that is always moving higher. "When we present an award to a carrier, we stress the importance of continuous improvement. In fact, we tell them that winning creates a more difficult challenge for them than it does for carriers that did not win. We tell the carrier that the hurdle of performance will be raised next year, so that it will be difficult for them to repeat. Few do."

Airborne Express has won the award two out of the last three years, a feat no other carrier has achieved. Larry Horton, chairman of Texas Instruments' corporate traffic council, says the award to Airborne Express this year "exemplifies their continued ability to provide excellent service to multiple business entities of Texas Instruments."

TI is a major user of overnight air express for its lightweight commodities such as electronic components, calculators, learning aids, computer parts and business correspondence.

As the domestic overnight express carrier for TI, Airborne services 150 TI locations, handling approximately 22,000 to 25,000 packages per month. "Airborne's flexibility and special handling services have been a major benefit to TI," says Horton. "In particular, its electronic data interchange system has proven invaluable in tracing packages and streamlining our air express billing system."

TI has presented its supplier awards since 1982. The award is part of a company-wide program called TQC, for "total quality culture," a comprehensive process covering product quality, supplier performance and personnel performance—virtually all aspects of its business.

The supplier award program for carriers is especially important, says Horton. "The whole focus of TQC is on gaining control of the process by working with contractors early on."

—Thomas A. Foster

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THE TRANSPORTATION & BUSINESS LOGISTICS MAGAZINE

VOL. 90, NO. 10

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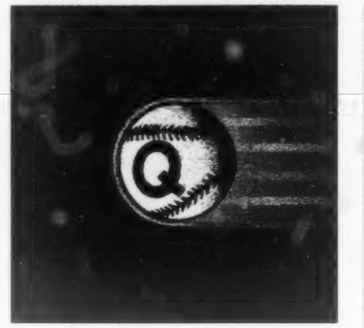
DISTRIBUTION's 1991 survey of logistics pay trends finds that companies tying pay to a single criteria may be increasingly in the minority; the 'How much have you saved for me lately?' school is losing favor. Also, over half of the firms responding to this year's survey said a "pay for performance" plan exists for logistics.



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AT&T's old phone equipment is still valuable, but only if they can get it back. By centralizing equipment returns and turning the transportation over to one carrier, AT&T is providing a more secure environment for equipment returns.

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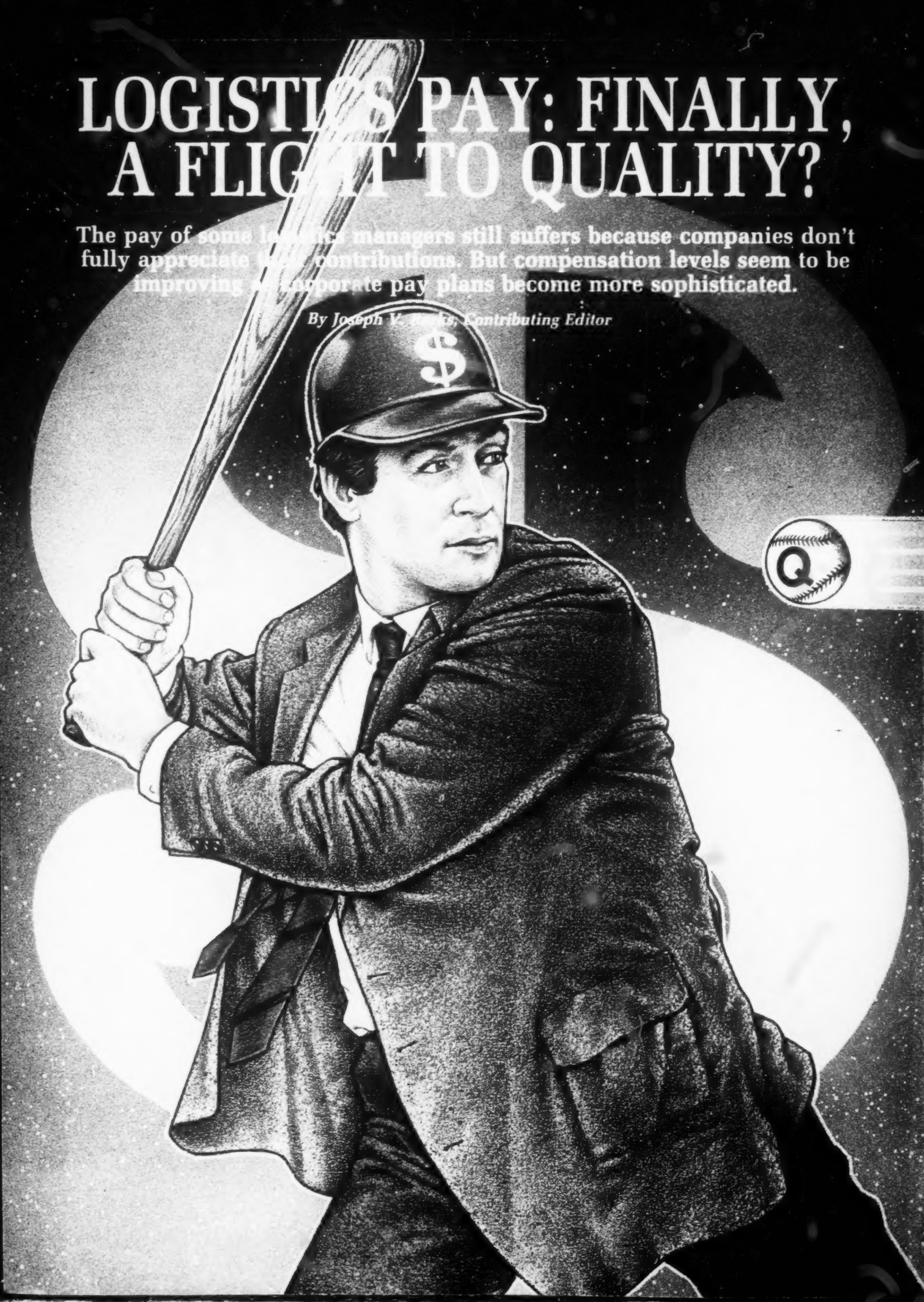
LOGISTICS PAY: FINALLY, A FLIGHT TO QUALITY?

The pay of some logistics managers still suffers because companies don't fully appreciate their contributions. But compensation levels seem to be improving as corporate pay plans become more sophisticated.

By Joseph V. Barks, Contributing Editor



A veteran transportation director, who we'll call Fred, was asked to describe how pay increases and bonuses for himself and others in his department are determined.

"It's always something new, year after year," Fred chuckles. "Sometimes you can't help but wonder if we'll be able to do enough each time around. We don't get many points for carrying over (savings and accomplishments) from previous years.

"We've been lucky the past few years," Fred adds. "They added international responsibilities to our department, and that opened up a whole new world of opportunities. The first bill I saw for ship chartering was for $685,000—quite a bit larger than any freight bill I'd ever seen to that point. We were able to reduce it by $130,000, which contributed quite a bit to our overall performance of close to $3 million in savings for the year.

Do you have a "Pay for Performance" plan?

YES 53% NO 47%

PAY FOR PERFORMANCE MEASURES USED IN LOGISTICS

	YES	NO
Adherence to transportation budget	55%	45%
Inventory levels	61	39
Adherence to stated customer service requirements	64	36
Productivity of work force	69	31

"New opportunities can also arise as the company grows," Fred notes. "But you do have to wonder sometimes how you'll be able to keep the savings level at the same threshold over the long haul."

We've known Fred a long time. He's a consummate pro—someone who takes fierce pride in his work and applies himself as intensely as anyone to the transportation/distribution field. It's probably OK, in Fred's case, that his company doesn't have, as he says, "incentive pay as such"; Fred would keep finding new ways to improve performance even if his yearly salary bump or bonus didn't depend on it.

We also know, however, that many other companies set pay levels for their transportation and distribution professionals in pretty much the same fashion as Fred's company—by asking, "How much have you saved for me lately?" And these companies often *don't* have guys like Fred working for them.

When business conditions or employee attitudes are less than ideal, one of two problems can occur: The opportunities for continued improvement fail to arise, or they do come up but are not exploited to full advantage. Either way, the chances are far greater that logistics managers will be improperly motivated or rewarded, and that their companies will not get a full return from their investment of logistics compensation dollars.

Going for the Goals

Happily, though, the results of DISTRIBUTION's 1991 survey of logistics pay trends, drawn from the

continued

ABOUT THE MERCER COMPENSATION SURVEY

The 1991 Materials and Logistics Management Compensation Survey from which this report is drawn was conducted in the first quarter of 1991 by William M. Mercer, Inc., a leading compensation, benefits and human resources consulting firm. Survey data reflects salary levels as of January 1, 1991, and bonuses that were paid out for the most recently completed fiscal year at the time the survey was completed.

Participants in 1991 included 177 organizations reporting data on over 7,000 logistics job holders in 290 U.S. locations. These companies constitute a representative sample of small, medium-sized and large companies, as measured by gross sales and dollar volumes purchased. For example, 15% of the responding firms had gross sales of less than $10 million, 17% had sales of $10 million to $50 million, 14% had sales of $50 million to $100 million, 31% had sales of $100 million to $500 million, 9% had sales of $500 million to $1 billion, and 14 percent had sales of over $1 billion. Also, 33% of the respondents had purchase volumes of less than $10 million, 22% had volumes of $10 million to $50 million, 12% had volumes of $50 million to $100 million, 29% had volumes of $100 million to $1 billion, and 4% had purchase volumes over $1 billion.

The full survey, now in its 11th year, breaks out compensation data by industry, annual sales, type of operation, and geographic location. Information is also provided on salary administration practices and employee benefit programs offered by survey participants. Copies of the full survey report are available for $225 to participating organizations and $450 to nonparticipants. "Custom cuts" of the data (for selected industries, locations, etc.) are also available for $200.

For more survey information, write to William M. Mercer, Inc., National Survey Group, 1417 Lake Cook Rd., Deerfield, IL 60015, or call (800) 333-3070.

William M. Mercer, Inc., 11th Annual Materials and Logistics Management Compensation Survey, indicate that companies tying pay to a single criteria such as savings levels – or to nothing at all – may be increasingly in the minority.

This year for the first time, the Mercer survey included specific questions about how performance measures and other targets are used to determine logistics pay. As the table on p. 29 shows, over half (53 percent) of the 163 firms responding said a "pay for performance" plan exists for logistics positions.

TOP DISTRIBUTION EXECUTIVE

Top distribution position in a corporation with over $100 million in sales. Responsible for shipping/receiving, traffic, field warehousing, and customer order processing. Reports to the top materials management executive at the corporate level.

	10th Percentile	50th Percentile	90th Percentile
Salary	$60.0	$83.1	$128.8
Total (including bonus)	60.0	94.9	146.7
Perks	🚗 24.2%	⛳ 7.7%	% 7.7%

TRANSPORTATION MANAGER

Responsible for movement of material from all production facilities in a corporation with over $100 million in sales. Supervises other traffic managers or specialists. Typically reports to the top distribution executive at the corporate level.

	10th Percentile	50th Percentile	90th Percentile
Salary	$42.0	$56.9	$85.0
Total (including bonus)	42.2	60.5	92.5
Perks	🚗 5.9%	⛳ 1.5%	% 2.9%

UNIT TRANSPORTATION MANAGER

Responsible for movement of material from production facility, including shipments to domestic and international customers and to plants within the company. May supervise other traffic managers. Typically reports to the distribution manager.

	10th Percentile	50th Percentile	90th Percentile
Salary	$35.6	$44.7	$59.1
Total (including bonus)	36.0	45.9	59.1
Perks	🚗 0.0%	⛳ 0.0%	% 0.0%

OUTBOUND OPERATIONS MANAGER

Responsible for shipping of final or in-process products as well as timely reporting of completed shipments. Handles tracking and claims, routing and carrier selection. Typically reports to the distribution manager.

	10th Percentile	50th Percentile	90th Percentile
Salary	$27.5	$35.4	$59.3
Total (including bonus)	27.5	35.6	59.3
Perks	🚗 0.0%	⛳ 0.0%	% 0.0%

When such a plan does exist, a number of different measures are being used to gauge logistics performance: productivity of the work force (used in 69 percent of the plans); adherence to stated customer service requirements (64 percent); inventory levels (61 percent); and adherence to transportation budget (55 percent).

The Mercer survey also shows that a significant number of companies now even go beyond logistics-specific performance measures and are tying pay for logistics professionals into the effectiveness of "Total Quality Management" (TQM) programs that have been instituted companywide.

TQM at Target

One such company is fast-growing Target Stores, the Minneapolis-based discount chain. Don Heide, senior vice president-distribution, says installing TQM into the logistics function is now established as one of many objectives upon which his pay, as an officer of the company, is based. In fact, says Heide, a case can be made that TQM is now *the* goal from which all other performance measures stem. "(TQM) gets pretty specific and pretty pervasive if you do it right," he says. "Things that go with it, like action teams, statistical process control and continuous improvement, pretty much cover everything we do."

Heide himself has been on a bonus plan for six years. "The bonus is clearly tied to company performance," he reports. "The size of the bonus pool is dependent on company results. My own share of the pool, as well as my pay grade, is dependent on a performance rating that relates directly to how well we meet distribution objectives. These objectives can be numbers-oriented, such as hitting budget, safety or inventory targets. Or, they can involve things like on-time and on-budget construction of a major new DC; installing a new software system; implementing new personnel programs; or instituting other new distribution features.

continued

And these would all be established in addition to the objectives that are part of TQM."

About three years ago, Heide reports, Target put its general managers and directors in the logistics department on an incentive pay program. Now these managers also get a bonus based on a performance rating that is tied to the same criteria that determine Heide's pay. "It's a fixed bonus plan," Heide reports, "representing an opportunity for managers to earn an additional percentage of their base salary. Depending on their performance rating, they either get all or some of that (pre-determined) percentage."

Target hasn't yet pushed incentive pay plans lower into its logistics function, but Heide feels that day may not be too far off. "Within the next two to three years," he says, "it may go all the way to become a total group incentive, covering the entire department or an entire facility."

While some contend it's too difficult to establish specific goals and payouts for a function like logistics—particularly its non-line-related areas—Heide has yet to see a downside to the notion of incentive pay for logistics positions. To the contrary, he feels it makes everyone in the department focus more clearly on both the small *and* big pictures. "I guarantee you," he says, "that when we're making decisions in our operating committees, (the performance criteria) have a bearing. And I certainly know that everyone likes it when the bonus checks go out."

Zero-based Accounting

Throughout the logistics field, pay for performance and "pay for quality" appear to be becoming more entrenched. At Nabisco Brands, reports Vice President-Distribution Joseph Andraski, pay programs of this type have become "part of the culture." Andraski admits it may not appear easy at first to find appropriate measures for various logistics functions, but he's come to discover that logistics can be "fairly quantifiable," particularly as Nabisco has adopted a "zero-defects mentality." When the "quantity" you're shooting for is zero, he notes, it becomes much easier to determine when the target has been hit, or missed.

Hollister, Inc., an Illinois-based manufacturer of disposable health care products, is perhaps more typical of where the logistics field now stands in the pay-for-performance arena. Director of Distribution Peter Reisner says his department hasn't yet progressed to the point where a complete set of performance measurement standards have been established, beyond the usual calculations of the cost of distribution *vis a vis* sales, or the cost of transportation *vis a vis* shipping volume.

"It's more or less been internal to this point," says Reisner. "We're currently trying to sort it out so we can be more specific. We have a fairly new and intense program for quality performance that involves a switch to MRP, and as part of that we want to begin to quantify goals for acceptable service levels and world-class production techniques."

Hollister is now in its second consecutive year of tying compensation to what's been established as the top goal for the logistics department. "The goals change with our priorities from year to year," he notes. And while the company has tried to push a performance-based pay orientation as deep into the logistics organization as possible, Reisner admits it can be tougher at certain levels. "You al-

continued

TOP MATERIALS MANAGEMENT EXECUTIVE

Responsible for all materials management functions, including production planning, distribution and purchasing. Reports to corporate manufacturing, operations or other top level officer. Supervises over 100 employees through subordinates.

	10th Percentile	50th Percentile	90th Percentile
Salary	$64.2	$ 95.6	$149.8
Total (including bonus)	65.5	115.6	207.5
Perks	🚗 44.2%	⛳ 11.8%	💳 17.6%

MATERIALS MANAGEMENT EXECUTIVE

Top materials manager at the unit level. Responsible for both production and inventory planning and control, distribution, and purchasing. Reports to higher level manufacturing or operations management.

	10th Percentile	50th Percentile	90th Percentile
Salary	$42.6	$57.9	$84.0
Total (including bonus)	45.5	64.0	87.2
Perks	🚗 11.9%	⛳ 7.1%	💳 7.1%

MATERIALS HANDLING SUPERVISOR

Generally responsible for the physical movement of material within a manufacturing/production facility. Supervises intra-plant personnel including drivers, material handlers, etc.

	10th Percentile	50th Percentile	90th Percentile
Salary	$29.3	$35.7	$44.0
Total (including bonus)	29.3	35.7	44.7
Perks	🚗 0.0%	⛳ 0.0%	💳 0.0%

ways want to establish mutual goals, which means you want the employee to be actively involved with the first round of suggestions," he notes. "But it can be more difficult at the warehouse level, where people are perhaps not as capable of expressing measurable goals as would be a professional engineer."

The aggregate pay data collected by Mercer in the 1991 survey (which reflect salary levels as of January 1, 1991, and bonuses for the reporting firm's most recently completed fiscal year) suggest that all of this increased attention toward first quantifying logistics accomplishments, and then rewarding logistics professionals for those achievements, has resulted in a long-overdue elevation of pay levels in the field. While year-to-year survey comparisons must be approached carefully because of shifts in the survey base, overall it can be seen that levels are significantly higher than they were a year ago.

TOP PURCHASING EXECUTIVE

Purchasing position in a corporation with over $100 million in sales. Responsible for purchase of raw materials, component parts, equipment, services and supplies. Reports to the top materials management executive at the corporate level.

	10th Percentile	50th Percentile	90th Percentile
Salary	$49.7	$81.7	$121.9
Total (including bonus)	53.5	92.0	147.0
Perks	🚗 16.9%	⛳ 6.8%	🍴 6.8%

PURCHASING MANAGER

Top purchasing position at the unit level. Responsible for purchasing of raw materials, component parts, equipment, services, and supplies. Reports to the materials management executive.

	10th Percentile	50th Percentile	90th Percentile
Salary	$42.3	$56.0	$70.3
Total (including bonus)	44.6	59.9	74.1
Perks	🚗 8.0%	⛳ 0.0%	🍴 0.0%

PURCHASING AGENT

Responsible for purchase of goods/services used by manufacturing facilities in a corporation with over $100 million in sales. Approves/qualifies vendors; authorizes purchase orders. Reports to top purchasing executive at the corporate level.

	10th Percentile	50th Percentile	90th Percentile
Salary	$35.4	$49.6	$62.5
Total (including bonus)	35.4	50.5	65.8
Perks	🚗 0.0%	⛳ 0.0%	🍴 0.0%

PURCHASING CONTRACT ADMINISTRATION MGR.

Responsible for review and administration of long-term purchase contracts in a corporation with over $100 million in sales. Supervises other purchasing contract administrators. Reports to the top purchasing executive at the corporate level.

	10th Percentile	50th Percentile	90th Percentile
Salary	$50.0	$66.1	$90.0
Total (including bonus)	50.8	75.6	102.0
Perks	🚗 0.0%	⛳ 6.7%	🍴 6.7%

Sharing the Wealth

Bruce Spiegel, a principal in Mercer's Philadelphia office, notes that an analysis of five-year compound growth for senior management logistics positions shows an annualized increase in total compensation of 8 to 9 percent (see chart, p. 38). Spiegel feels this growth reflects corporate recognition of these executives as people who are "in a position to significantly impact the bottom line through production, distribution and purchasing decisions. In today's cost-conscious business environment," Siegel notes, "logistics executives' skills are seen as critical to profitability improvement."

Unfortunately, it does appear that the pay improvement in the field has been top-heavy—perhaps reflecting companies' difficulties in pushing performance measures, and thus proper recognition, into lower logistics levels. The same five-year analysis shows that pay for subordinate levels increased during the same period within a much smaller range of 3.5 to 5.1 percent. "Purchasing agents, buyers, material planners, schedulers and others at positions below the senior management level can also have a big affect on profitability," notes Spiegel. "But you wouldn't know it by their pay treatment over the last few years."

Still, the improvement in top executive pay has been enough to elevate overall pay increases to levels that now are on a par with general industry averages—which certainly wasn't the case a year ago. Where actual salary increases for logistics executives averaged 5.8 percent in 1990, the average for the industry as a whole was 5.7 percent. The average exempt lo-

continued

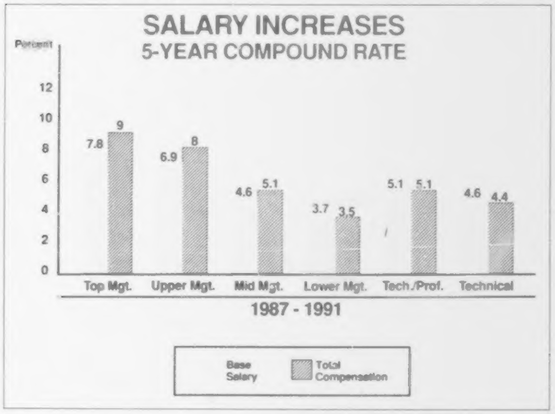
gistics increase of 5.4 percent matched the general industry average, while the nonexempt logistics average of 5.1 percent lagged general industry (5.3 percent) slightly.

One way lower-paid logistics positions appear to win out, however, is that when they do get bonuses, they tend to get bigger ones than their counterparts in other fields. As the bonus comparison chart below shows, average bonuses for logistics positions at the $25,000 level were nearly double those earned in general industry. That was the only pay level where logistics bonuses exceeded those of business as a whole, showing again that while the trend to variable pay in logistics may be accelerating, it still lags the pace set by other professional disciplines.

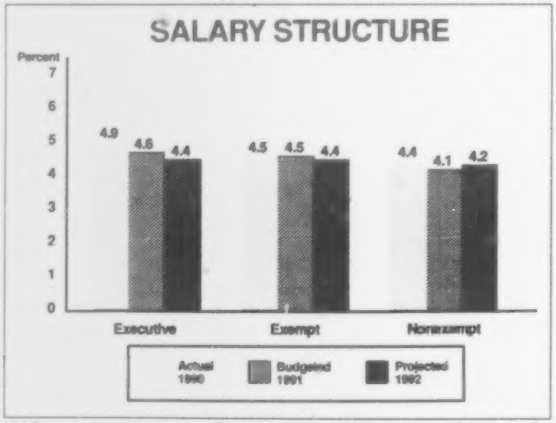
Higher Unit Audits

As for the individual positions for which salary, bonus and perquisite data are shown throughout this special report, Spiegel notes these general trends when comparing the 1991 figures with previous years' results (again reminding readers that the samples shown are not directly comparable, and also noting that some adjustments in titles and job descriptions were made in this year's survey, in response to industry feedback):

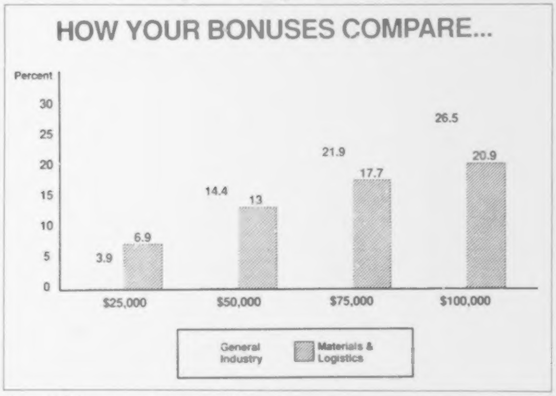
- An apparent shift in responsibility to division and subsidiary levels, as reflected by increased pay for unit heads. The role of top logistics executive appears to now be generally defined as one that is more strategically oriented, with less direct control over purchases of equipment or services. "There appears to be more of a 'holding company' mentality emerging in logistics," says Spiegel, "and with that, more autonomy is being given to units and subsidiaries."
- Flat or even decreasing pay for jobs with highly restricted scope, such as "outbound operations manager." This would seem to indicate a trend toward rewarding positions that adopt more of a total logistics perspective.
- A significant increase in pay for distribution center managers (Editor's Note: a chart for this position is not included in this report). Again, this may reflect a renewed emphasis on decentralized logistics management and a broadening of unit-level responsibilities. ■



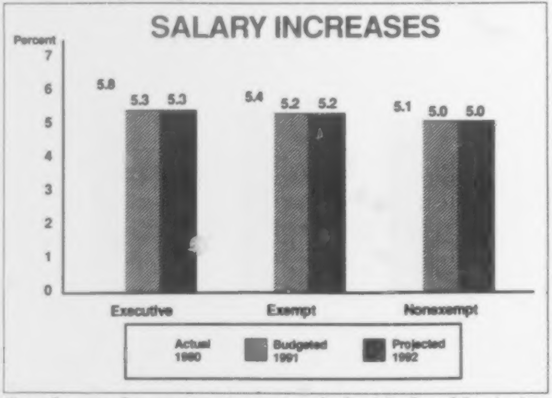
Top managers are rewarded for bottom line contributions, but recognition lags at lower levels.



Salary structure is the amount companies have adjusted salary ranges. It's a factor in setting increases.



Variable pay, including bonuses, continues to be lower in logistics than in other disciplines.



Pay for performance apparently has helped logistics pay increases approach industry averages.

Includes a valuable Guide to Using DUN & BRADSTREET EXPORT SURVEY (See Pg. 13)

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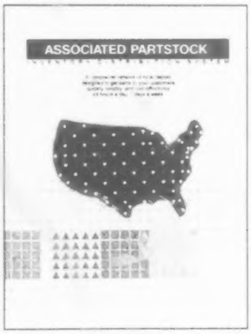
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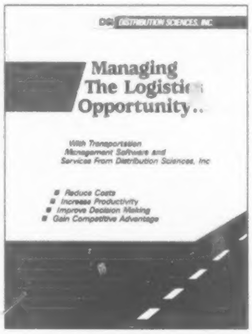
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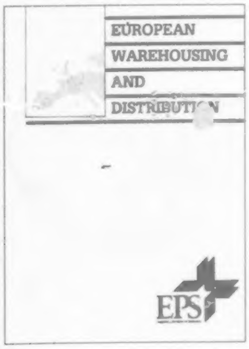
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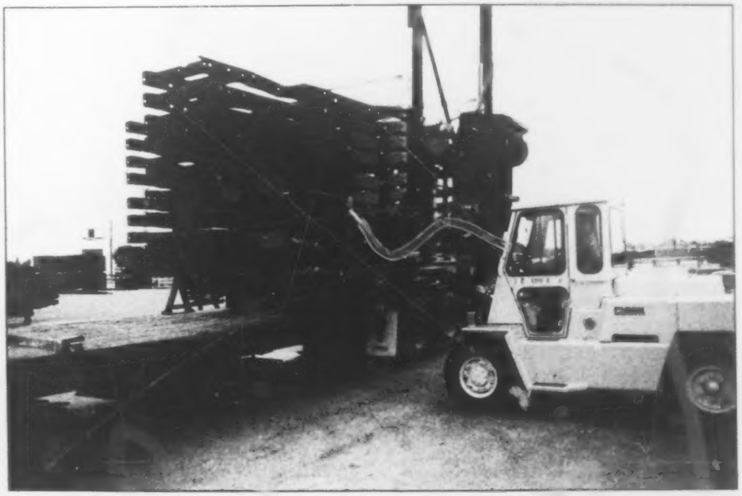
TRADE BARRIERS A DRAG ON EXPORTS

If exports are to continue providing strong support for economic recovery, increasing emphasis must be placed on the structural, rather than economic, barriers to international trade.

By Joseph W. Duncan & Douglas P. Handler

The results of the May 1991 Dun's 5,000 Export Survey indicate that the outlook for increased exports remains strong, although not as strong as last year. In addition, the survey indicates that the global economic environment for U.S. exports will be less hospitable in the coming year. Adverse changes in structural and economic conditions facing U.S. exporters will result in fewer firms exporting fewer goods and services over the next year.

The Dun's 5,000 surveys are annual topical surveys on business conditions in the United States. The sample of 5,000 firms is selected and weighted so that it is statistically representative of the entire population of U.S. businesses.



The U.S. economy needs more export activity to rebound, but according to the D&B survey, fewer firms will export in 1992.

The key points covered in the current survey include:

- About half of all firms expect to increase exports over the coming 12 months—down from 1990's 64 percent. Given the slower, but steady growth in exports seen recently, the results imply that this trend will continue.
- The proportion of all firms that export within the business population declined in the past year.
- Yet, these exporters are shipping their wares to a more varied set of destinations.
- The larger firms and firms in the manufacturing sector have the greatest propensity to export.
- Structural considerations, such as trade restrictions or obtaining trade data, are at least as important as economic factors in hindering many firms' export efforts.
- Only 1.0 percent of firms that currently do not export have any plans to do so in the coming year.

The Nature of U.S. Exports

Since 1986, in volume terms, over half of all growth in economy has been attributable to gains in exports. In 1990, the share of economic growth from exports was well over 90 percent. This means that the perfor-

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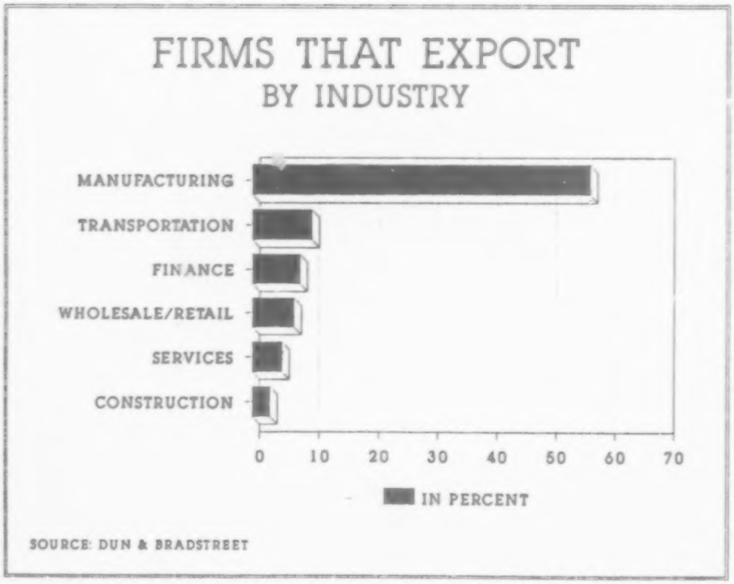
mance of the domestic economy was even more sluggish than the mediocre aggregate growth numbers of the past two years imply. Thus, the strength of the recovery from the recession depends heavily on the rapid growth of exports.

To sustain this growth, a multisectoral effort is needed. In 1990, U.S. exports totaled $673 billion in goods and services (in current dollars). About 60 percent of this sum was merchandise. Such heavy capital goods as machinery or transportation equipment, and industrial supplies like chemicals or raw materials, comprise the lion's share of goods exports. Consumer products and foodstuffs each constitutes a 10 percent share of merchandise exports.

Fig. 1



SOURCE: DUN & BRADSTREET

U.S. exports totaled $673 billion and included a broad range of goods and services. Manufactured goods account for the vast majority of U.S. exports.

On the services side, about half of services exports is factor income, i.e., income payments earned abroad by U.S. individuals and corporations. These are treated as exports since they involve inflows of capital to the U.S. the same as when payment is made for any type of merchandise sent outside U.S. borders. The other half of service exports involves items, such as business or telecommunications services, insurance, travel services or foreign students' tuition in the United States.

Who's Doing the Exporting

In the 1991 survey, among firms that export, 50 percent of all firms expected their exports to increase over the next 12 months, down from 64 percent in 1990's Dun's 5,000 survey. With the recent modest growth in U.S. exports seen in the past few months, the result implies a continuations of this trend. In this year's survey, transportation and public utility firms were the most optimistic, with 63 percent of all firms expecting higher exports. In contrast, 55 percent of wholesale and retail firms, and 52 percent of manufacturing firms anticipated higher exports.

Among larger firms, i.e., businesses with more than 10,000 employees, 57 percent were more likely to expect increased exports, compared with only 41 percent of firms with fewer than 100 employees.

In 1991, only 1[illegible] percent of the Dun's 5,000 respondents exported any goods or services, compared with 18 percent in 1990. Using earlier D&B studies that tabulated firm size characteristics, these shares imply that there are between 650,000 to 750,000 exporting firms in the U.S. The share of firms that export by industry and employment size are shown in Figures 1 and 2.

In Figure 1, there are many reasons why the share of exporters is small for some industries. For many firms, such as restaurants or construction contractors, exporting is simply not feasible given the small average size of such firms, the nature of their product or the strictly local orientation of their business. Other businesses, such as farms, may be indirect exporters, selling their goods to a wholesaler, who, in turn, sells to a non-U.S. customer.

In Figure 2, since 98 percent of all firms have fewer than 100 employees, the fact that only 5.9 percent of all firms in this category export many be misleading. In fact, this group comprises the vast majority of exporters.

Impediments to Export Growth

Firms in the Dun's 5,000 sample were also asked about impediments to their companies' export programs. Multiple responses were allowed. Among the choices presented to the respondents, the greatest perceived impediment was "trade barriers imposed by other countries," noted by 45 percent of all respondents. A distant second was exchange rate fluctuations at 24 percent. Third, mentioned by 16 percent of the survey respondents, was the unavailability of foreign trade data, U.S. export limitations and restrictions was mentioned by only 14 percent of those surveyed and the inability to receive export financing was cited by only 11 percent of exporters.

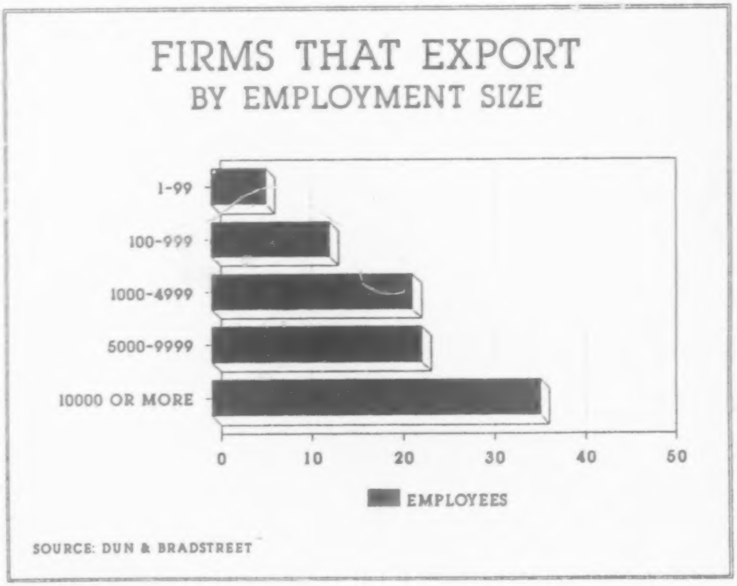
The responses to this question indicate that one of the reasons for the dimmer export picture may be at least as structural as economic. Of course, weaker demand for U.S.-made goods in Europe, Canada and Japan, areas where economic slowdowns are occurring or expected is a major contributor. But worldwide protectionist policies, whether real or merely threatened, are also hampering exporters' plans to expand.

In addition, the larger the firm, the more likely trade barriers were mentioned as a problem, cited by only 21 percent of all firms with fewer than 100 employees, but by 64 percent of firms with greater than 10,000 employees. Thus, smaller firms, which are more likely to serve niche markets with less local competition, tend not to feel the brunt of trade restrictions imposed by other countries. Larger firms, which are more of a competitive threat to industries in other countries, must indeed keep an eye on the trading rules and customs of their customer countries.

In light of the huge increase in the dollar in the first part of this year, especially against many European currencies, it is initially surprising that so few respondents mentioned exchange-rate risk as a major impediment. However, currency risk can be minimized by the use of currency-hedging tools, pricing in dollars or selling to such countries as Canada, where U.S. dollar exchange-rates are relatively stable.

Other notable results include the fact the unavailability of trade data was cited by many more service sector firms than manufacturers, although this problem was cited by fewer than a quarter of all service sector businesses. Also, the inability to receive export financing was reported to be more of a problem for larger firms than smaller ones, although, again, few respondents cited export financing as a problem.

Fig. 2



While about 35 percent of the largest companies in the U.S. export, the majority of exporters are companies with fewer than 100 employees.

Export Destinations Diversifying

Even though the prospect for continued strong export growth is diminished, the destinations of U.S. exports has been significantly diversified in the past year, as seen in Table 1.

Because fewer exporters are actively exporting, this suggests that the remaining exporters are much

continued

Table 1

EXPORT DESTINATIONS

Country or Region	Share of Firms 1990	 1991
Canada	75.6%	79.2%
Western Europe	66.3	78.4
Pacific Basin (other than Japan)	60.1	68.9
Japan	48.8	62.3
Mexico	51.5	55.9
Central/South America	45.2	51.3
Eastern Europe/USSR	22.8	37.7

more diversified in their export destinations. Canada and Western Europe remained the top two export destinations in the 1991 Dun's 5,000 survey, despite economic downturns in these areas. This suggests that economic growth in a country is not a prerequisite for market penetration by U.S. firms. Exporters can grow by capturing increased market shares in other countries rather than tapping new markets fostered by economic growth.

However, economic growth does make an exporter's job easier. The share of U.S. exporters shipping to fast-growing non-Japanese Pacific Basin markets, and Japan itself, increased dramatically. In fact, more exporters reported that they ship goods or services to Japan than to Mexico. The share of firms reporting dealings with Latin America and the formerly communist areas of Europe increased, as well.

Non-Exporters' Prospects Dim

Among the firms who classified themselves as non-exporters, only 1.0 percent of these firms intend to start exporting in the next 12 months, down from 2.5 percent in the 1990 survey. This decline in the share of potential exporters implies that a large and increasing share of the export growth over the next year or two will involve firms that are already exporting. In addition, the discouragement seen in firms that export is even more prevalent among the non-exporters. When asked if their firm was too small to export, only 16 percent of all non-exporters answered yes, down from 45 percent one year ago. Thus, non-exporters probably see many of the same problems and have the same fears as exporters.

Implications for the Future

Overall, fewer firms will be exporting in the coming 12 months and, of these firms, a smaller share is expecting to increase exports. However, the remaining exporters are doing business with more countries in more regions. The Dun's 5,000 Export Survey cannot say whether this is a result of firms seeking out more profitable regions or a statement that firms prospering via exports do so by exporting to a wide variety of countries. Most likely, both statements are true.

In any event, for export growth to continue, this diversification trend forces an increasing emphasis to be placed or the rules of international trade rather than economic circumstances. Fortunately, the implementation of the U.S.-Canadian Free Trade Agreement, the likelihood of a similar agreement with the Europe, and the possibility of successful GATT (General Agreement on Trade and Tariffs) negotiations will all help to create conditions conducive to this export growth. With economic growth in the U.S. currently so dependent on exports, the success of these trade initiatives is imperative. ■

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